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ABSTRACT

This document reports on an examination of the analysis, design, development, implementation, and evaluation of an interactive computer program. The program is called an expert system adviser, and is for tourists planning on visiting Thailand. The expert system contains well-organized information that provides detailed coverage of Thailand. The instruction is intended to guide tourists and interested individuals who want to go to Thailand for a vacation. (Author/DB)

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THE SCHOOL OF MEDIA AND ARTS

of

NEW YORK INSTITUTE OF TECHNOLOGY

announces the

Final Examination

of

Vinita Kanchanosatha

for the degree of

MASTER OF SCIENCE

in

TRAINING AND LEARNING TECHNOLOGY

An Expert System Adviser for Tourists Planning to Visit Thailand

Abstract

This project represents an examination of the analysis, design, development, implementation, and evaluation of an expert system adviser for tourists planning to visit Thailand. The designer applied the systematic approach outlined in the Instructional Systems Design process in the formulation of learning activities. The instruction guides tourists and interested individuals who want to go to Thailand for a vacation. Formative and summative evaluation techniques were utilized to ensure the best possible results. A complete description of the development process is provided.

Friday, May 25, 1990 at 4:30 p.m.

in

Conference Room, French Chateau
Old Westbury Campus
Old Westbury, NY

SO 021 188

BEST COPY AVAILABLE

AN EXPERT SYSTEM ADVISER FOR TOURISTS PLANNING
TO VISIT THAILAND

a

THESIS/PROJECT

by

VINITA KANCHANOSATHA

submitted to the faculty of the
School of Media and Arts

of

NEW YORK INSTITUTE OF TECHNOLOGY

in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

in

TRAINING AND LEARNING TECHNOLOGY

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submitted to The Faculty of the

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CHAPTER 1

INTRODUCTION

Overview

This project describes in detail the analysis, design, development, implementation, and evaluation of an expert system. It is designed for tourists and interested individuals who want to go to Thailand for a vacation. The method used throughout the project is based on the Interservice procedures for instructional system development (ISD).

Background

Thailand, the word (in Thai), literally means The Land of Freedom. The country in southeast Asia, is predominantly a Buddhist kingdom, almost equidistant between India and China. For centuries known by outsiders as "Siam," Thailand has been something of a southeast Asia migratory, cultural, and religious crossroads.

With an area of some 510,000 square kilometres and a population of some 55 million, Thailand is approximately the same size as France. It is bordered by Malaysia to the

south, Burma to the west, Laos to the north, and Kampuchea to the east.

Geographically speaking, Thailand is divided into six major regions: the mountainous north where elephants work in the forests, and winter temperatures are sufficiently cool to permit cultivation of temperate fruits such as strawberries and peaches; the sprawling northeast plateau, largely bordered by the Mekong River; the central plain, one of the world's most fertile rice and fruit-growing areas; the eastern coastal plain, where fine sandy beaches support the growth of summer resorts; the western mountains and valleys, suitable for the development of hydro-electric power; and the peninsula south where arresting scenic beauty complements economically vital tin mining, rubber cultivation and fishing.

History. Recent archaeological discoveries around the northeast hamlet of Ban Chiang suggest that the world's oldest Bronze Age civilization was flourishing in Thailand some 5,600 years ago.

Successive waves of immigrants including Mons, Khmeres, and Thais gradually entered the land mass now known as Thailand, slowly travelling along fertile river

valleys from southern China. By the 11th and 12th centuries, Khmeres ruled much of the area from Angkor.

By the early 1200's, Thais had established small northern city states in Lanna, Phayao, and Sukhothai. In 1238, two Thai chieftains rebelled against the Khmeres Suzerainty and established the first truly independent Thai kingdom in Sukhothai (literally "Dawn of Happiness").

Sukhothai declined during the 1300's and eventually became a vassal state of Ayutthaya, a dynamic young kingdom further south in the Chao Phraya River valley. Founded in 1350, Ayutthaya remained the Thai capital until 1967 when it was destroyed by invaders, the Burmese.

During Ayutthaya's 417 years as the capital (under the rule of 33 kings), the Thai brought their distintive culture to full fruition. They totally rid their lands of Khmere presence and fostered contact with Arabian, Indian, Chinese, Japanese, and European powers.

Ayutthaya's destruction was as severe a blow to the Thais as the loss of Paris or London would have been to the French or English. However, a Thai revival occurred within a few months, and the Burmese were expelled by King Taksin, who later made Thon Buri his capital. In 1782, the first king of

the present Chakri dynasty, Rama I, established his new capital on the side of a riverside hamlet called Bangkok (Village of Wild Plums). Two Chakri monarchs: Mongkut (Rama IV who reigned between 1851 and 1868) and his son Chulalongkorn (Rama V, 1868-1910) saved Thailand from western colonization through adroit diplomacy and selective modernization.

Today, Thailand is a constitutional monarchy. Since 1932, Thai kings, including the present monarch H.M.King Bhumibol Adulyadej (Rama IX), have exercised their legislative powers through a national assembly. Their executive powers operate through a cabinet headed by a prime minister and their judical powers through the law courts. **People.**Through her long history, Thailand has gently absorbed immigrants who helped enrich the indigenous culture. Many were skilled as writers, painters, sculptors, dancers, musicians and architects.

People inhabiting Thailand today share rich ethnic diversity -- mainly Thai, Mon, Khmere, Laotian, Chinese, Malay, Persian, and Indian stock -- with the result that there is no typical Thai.

Some 80 percent of all Thais are connected in some way

with agriculture. In varying degrees they are influenced by the religious ceremonies and festivals that help make Thailand such a distinctive country.

Religion. Theravada Buddhism is the professed religion of more than 90 percent of all Thais and casts strong influences on daily life. Buddhism first appeared in Thailand during the 3rd century B.C. at Nakhon Pathom, site of the world's tallest Buddhist monument, after the Indian Buddhist Emperor Asoka (267-227 B.C.) despatched missionaries to Southeast Asia to propagate the newly established faith.

Besides molding morality, providing social cohesion, and offering spiritual succour, Buddhism provided incomparable artistic impetus.

Another reason for Buddhism's strength is that at least one male member of most Thai Buddhist families has studied Buddha's teaching in a monastery. It has long been a custom for Buddhist males over twenty, once in their lifetimes, to be ordained for a period ranging from five days to three months. This usually occurs during the annual Rain Retreat, a three-month period during the rainy season where all monks forego travel and stay inside their monasteries.

Besides sustaining monastic communities, Thai temples have traditionally served other purposes -- as the village hostelry, village news, employment and information agency, a school, hospital, dispensary and community center -- to give them vital roles in Thai society.

The Thais have always subscribed to the ideal of religious freedom. Thus sizable minorities of Muslims, Christians, Hindus, and Sikhs freely pursue their respective faiths.

Language. Spoken and written Thai remain largely incomprehensible to the casual visitor. However, English is widely understood, particularly in Bangkok where it is almost the major commercial language. English and other European languages are spoken in most tourist destinations, and Thai-English road and street signs are found nationwide.

Climate. Thailand has two distinct climates: a tropical savana climate from the Gulf of Thailand to the north and a tropical monsoon climate to the south. There are three well-defined seasons: the hot season (March and April), the rainy season (May through October), and the cool season (November through February). Average temperatures are about 83 Fahrenheit, ranging in Bangkok, for example, from 96

Fahrenheit in April to 62 Fahrenheit in December.

Time. It is seven hours ahead of Eastern Standard Time.

Thailand is a very popular tourist destination in Asia because of her abundant attractions which include mountain and national marine parks, sparkling beach resorts, ruined cities, archaeological wonders, scenic beauty, and year-round festivals and events. The number of tourist arrivals to Thailand are shown in Table 1.

Table 1

International Tourist Arrivals in Thailand

	TOTAL Jan-Dec/88	TOTAL Jan-Dec/87	% CHANGE 88/87
The Americas	299,762	261,162	+14.78
Europe	905,611	719,871	+25.80
Africa	24,866	18,209	+36.56
Middle East	144,025	140,920	+2.20
East Asia & Pacific	2,583,032	2,125,249	+21.54
South Asia	273,441	217,547	+25.69

Source of data : Immigration Division, Police Department

Statement of the Problem

According to the increasing number of tourist arrivals to Thailand as shown in Table 1, Thailand has become one of the most popular destinations among tourists from around the world. Thousands of tourists went to Thailand each year enjoying the exotic beauty of the country. However, there are some problems that tourists face when they are in Thailand. They are confused with broad and varied tourist information. Although they can get information from the hotel or travel agents, they have some difficulty in selecting the correct tour program. The information provided by hotel and travel agents is not well organized. Some information is too commercial and obsolete. Tourists who are not well prepared get confused and waste their time and money. This problem discourages some potential tourists who are planning to go to Thailand. Therefore, in order to provide worthy information for tourists, an expert system is an appropriate form of aid to serve potential tourists. It contains well-organized information that covers everything about Thailand. This will be a very useful program to both help promote Thailand and help tourists from anywhere in the world who wanting to know and visit Thailand.

Purpose of the Project

The propose of the project is to promote Thailand and to enable travellers and interested individuals select and find information about Thailand.

Definition of Terms

Amphur	-	City
Bot	-	Temple where religious ceremonies are held
Chedi	-	Bell-like dome, often containing relics
Expert system	-	a class of computer hardware and software that can help advise, diagnose, analyze, consult, and categorize
Farang	-	Foreigner (but with no pejorative sense)
Klong	-	Canal
Knowledge engineering	-	used to develop an expert system. They are skilled at observing and analyzing the methods used by human experts to solve problems

in a particular discipline

Muban - Village

Prang - Cylinder with round top, pointing up like a finger

Province - State

Stupa - Tower or pagoda of ten burial sites

Tambon - Communes

Viharn or Wihan - Preaching or worship hall

Wai - Prayer-like greeting with palms of hands together and head inclined

Wat - A monastery or temple complex

Assumptions

The following are the assumptions of this project:

1. That an expert system is a satisfactory media to disseminate information to tourists or potential tourists.
2. That the user of this expert system is familiar with the use of a computer.
3. That the user has preestablished preferred interests.

Limitations

The following are the limitations of this project:

1. This project is designed only for travelers and interested individuals who want to know about Thailand for vacation purposes.
2. The expert system developed in this project is limited to IBM PC, XT, AT, PS/2 or compatable personal computer, with a 5 1/4" floppy diskette, 384 RAM internal memory minimum, PC-DOS or MS-DOS operating system version 2.0 or later.
3. The instructional module may not be suitable for use in other types of organizations, circumstances, times, or countries without appropriate modifications.

Method and Procedures

The method and procedures used to develop the expert system are analysis, design, development, implementation, and evaluation. The format is based on the Interservice procedures for instructional systems development (ISD) (Center for Education Technology, 1976). In addition, the knowledge engineering step used in expert system development is included. The knowledge engineering step related to ISD is shown in Table 2.

Table 2.

Knowledge Engineering Steps

ISD	Knowledge Engineering	Chapter
Analysis	1. Define need, task, and entry behavior. 2. Select the appropriate problem. 3. Define the target user. 4. Identify the subject(s) to be covered.	2
Design	1. Define goal, outcome. 2. Create outline. 3. Identify presentation strategies. 4. Develop flow chart, develop matrix, and write rule base.	3
Development	1. Implement PROLOG language program and setup the database. 2. Discuss and evaluate step-by-step. 3. Create the design material. 4. Program and debug. 5. Test and review until it gives correct results.	4
Implementation	1. Install hardware and software. 2. Allocate system resource. 3. Schedule the users. 4. Deliver the software.	5
Evaluation	1. Collect data and make diagnosis. 2. Update obsolete information.	6

Analysis

The analysis of this project included needs analysis, task analysis, and analysis of entry behaviors. The needs analysis helped identify the specific need for which an expert system may be a potential solution. The needs analysis also helped identify the appropriate information for visiting Thailand.

The task analysis analyzed the interest required to organize the appropriate information to develop an expert system. The analysis of entry behavior of the potential users of expert systems indicated that there were individuals who are interested in Thailand.

Design

The needs analysis, task analysis, and entry behaviors analysis were then considered for the design of the expert system. The design involved making a flow chart, developing a matrix, and writing the rule base.

Development

The project development involved writing and using an expert system. To develop an expert system, the designer had to implement the PROLOG language program, set up the knowledge base, and test it. The expert system

was arranged, tested, and revised until it could serve the users' need properly.

Implementation

In the implementation stage of the activity, the system was used by the users. The implementation phase included material (software) for use/test and reproduction.

Evaluation

The formative and summative evaluations were conducted to determine the effectiveness of the system. The completed system will continue to be updated and revised when needed, depending upon the feedback of the users and the circumstance within Thailand.

Summary

An overview of Thailand: its location, and geographical and cultural histories were presented. The need for a job aid to help tourists select appropriate information for visiting Thailand was analyzed. The designer built an expert system that presented information for anyone wishing to visit Thailand. Definition of terms were added to enhance the understanding of Thai words. Both assumptions and limitations were mentioned. Finally, the phases of development were described.

CHAPTER 2

ANALYSIS

Introduction

Analysis is the first of the five phases that will be discussed in the project. Dick and Carey (1985) defined a need as a gap between what is and what should be. In this chapter, need, job, and target population analysis are described. The instructional goal is defined. The literature and existing courses are reviewed. Project planning document including the PERT and Gantt charts are constructed. Knowledge engineering steps performed in the analysis phase include the following: define need, task, and entry behavior; select the appropriate problem; define the target user; and identify the subject(s) to be covered.

Needs Analysis

The need for a program for tourists and interested individuals came about because of a lack of qualified people at tourist agencies able to provide adequate information for visiting Thailand for a vacation. For example, there is only one place in New York that provides the tourists official information travelling in Thailand.

Meanwhile the demand of tourists has been increasing rapidly over the past two years. (See Table 1.)

Job Analysis

The target population is anyone for the first time going to or wanting to go to Thailand for vacation. Typically these individuals rely on information from tourist publication, travel, or hotel agents. The only task covered by this project is providing information for visiting Thailand for vacation. Based on discussions with ten acquaintances the information can be grouped into the following seven categories.

1. How to get there
2. The regional location
3. Major regional events
4. Major places of interest
5. Festivals and annual events
6. Transportation in Thailand
7. Useful information

Target Population Analysis

The target population of the project for the expert system happen to be tourists and interested individuals

who would like to go to Thailand for vacation. The target population is made up of Americans of all ages, both sexes, and all races. Each can use a computer on a basic level and is able to answer simple pertinent questions.

Organization Constraints

Video presentation is one appropriate method to implement information-giving to tourists. However, a personal computer-based expert system is a more appropriate media because of the range of individual needs and the time it would take to cover all in a video. For this project, an expert system was selected; however, the expert system lacks a pictorial component.

Instructional Goal

The purpose of the project is to enable tourists and interested individuals to select appropriate information for visiting Thailand for vacation. Using an expert system, person interested will answer questions and allow the expert system to provide the appropriate information.

Literature, Existing Courses, and Material Review

Related Theory

1. The Condition of Learning

(Robert M. Gagne, 1987)

This book is about the condition of learning. The author considers a set of circumstances when learning occurs, that is, when certain observable changes in human behavior take place that justify the inference of learning. A number of different kinds of changes brought about by learning will be described and related to the situations in which they occur.

Learning is a change in human disposition or capability that persists over a period of time and is not simply ascribable to processes of growth. The kind of change called learning exhibits itself as a change in behavior, and the inference of learning is made by comparing what behavior was possible before the individual was placed in a learning situation and what behavior is exhibited after such treatment. The change may be, and often is, an increased capability for some type of performance.

Literature Review

1.Mastering Expert System with Turbo Prolog.

(Carl Townsend, 1987)

Expert systems is a class of computer hardware and software that can help advise, diagnose, analyze, consult, and categorize. They are tools for problems that normally require the use of a human expert, professional, or specialist. Unlike traditional hardware and software that attempt to solve problems in a specific discipline using deductive reasoning. As a result, expert systems are capable of solving problems that are unstructured and poorly defined.

2.Expert System Prototype Develped as Job Aid

Dr, BJ, Buck (1987)

Training technology such as expert systems and intellegent job performance aids offers potential for reducing resource problems and standardizing training. The use of small expert systems as job aids will greatly enchance the instructional designer's ability to present a cost effective approach to solving training problems. Job aids reduce training time and increase the quality of the performer's work.

3. Introductory Reading In Expert System

Donald Machie (1987)

Expert system task is to cooperate with another kind of professional, the "domain specialist," with the aim of constructing in computer memory a cost-effective representation of the domain specialist's professional knowledge and skill. To the extent that he/she succeeds, the resulting system is able to do its duty as a consultant's assistant by answering clients' questions interactively.

4. How to do More in Less Time

G.V. Ricketts, (1988)

An expert system uses important data to make quick and consistent decisions, often in situations too complex, unsafe, or demanding for humans. The system recognizes goals, as well as alternative paths to reach them. This job aid alleviates knowledge engineering bottlenecks and representing knowledge in forms understood by the user.

5. A Survey and Critical Review of Expert System Research

M.A. Bramer (1987)

An expert system has been defined as a computing system which embodies organized knowledge concerning some specific

area of human expertise, sufficient as a skillful and cost-effective consultant.

6. Using Turbo Prolog

Phillip R. Robinson (1987)

This is a technical reference that introduced PROLOG and offered advanced programming techniques. The illustrations on windows were good. This book was a good supplement reference for creating an expert system.

Survey of Existing Courses and Materials

The designer found that there were no training materials nor existing courses available for Thailand information. This is true eventhough there are many Thailand books in the markets, libraries, and tourist information centers. There are no existing courses or material utilizing the advanced technology of computers for the information.

Plan for Design and Development Effort

Estimated Student Effort

An expert system is not a training medium. It is a job aid. Therefore, the term "student" does not strictly apply. Estimated user time is five minutes.

Project Plan

The designer used time lines to indicate the events and activities for the design of the expert system from start to finish. Program evaluation and review technique (PERT) and Gantt charts were developed. See Appendix A. Formative and summative evaluation of the project will be developed to identify the effectiveness of the training activity and its outcome.

Budget

The project was budgeted for hardware, software, and labor. The labor included analysis, design, development, implementation, and evaluation. Designer time was calculated at $20 per hour. Users who participated in the development process were calculated at $60 per hour. The project budget is shown in Table 3.

Summary

In this chapter, a needs analysis, job analysis, and target population analysis were performed, and the instructional goal was defined. The designer surveyed literature, as well as the existing course and review materials. PERT and Gantt were presented to indicate the time line, and the project cost was shown in a budget.

Table 3.

Project Budget

Expense	Designer Hours	Other Hours	Cost	Subtotal	Total
Labor					
Analysis	30	0	$ 600		
Design	50	0	1,000		
Development	70	0	1,400		
Implementation	80	200	13,600		
Evaluation	30	20	1,800		
Total Labor				$ 18,400	
Material					
Computer use @$1.00/hr.			$ 300		
Software (Turbo Prolog)			44		
Total Materials				$ 344	
Grand Total					$ 18,744

CHAPTER 3

DESIGN

Introduction

Design is the second phase in the five phases of the Interservice Model of Instructional System Design (ISD) presented in this project. An important component of the design stage is to identify the knowledge and skills needed to perform the tasks. The knowledge engineering steps included in the design phase include: define goal and outcome, create outline, identify presentation strategies, develop a flow chart, matrix, and write a rule base.

Instructional Task Analysis

The instructional task analysis identifies the knowledge and skills needed to perform the task in each goal that will be taught in the instructional module. The tasks involved for the designer are the components of creating an expert system. The tasks involved for the users are to find the appropriate place or event by using an expert system as a knowledge base tool. An expert system that has the ability to provide information to aid the user in performing the task. The major tasks are related to obtaining tourist

information related to a visit to Thailand for vacation. The complete task analysis is shown in Appendix B.

Instructional Objectives

Mager (1985) suggested that the format of an objective should include three characteristics: performance, condition, and criteria.

1. Performance : describe what it is the learner will be able to do.
2. Condition : statements of the conditions under which the learner will perform the desired behavior.
3. Criteria : performance that will be considered acceptable.

These three parts were included in the project's objective. The only objective was the following:

Given an expert system, the users will be able to get information appropriate to their individual needs by selecting and answering questions.

Entry Behaviors Defined

The entry behaviors that users must have are as follow:

1. be able to read English

2. be able to use a keyboard at a basic level
3. have a pre-knowledge of their own personal preference for what information they want to see or do.

These are required for users to be able to respond to questions that will be determind for information selection by the expert system.

Group and Sequence Objectives

There was only one objective, therefore, it is incapable of being grouped and sequenced. To acheive the objective the user must be able to do the following:

1. access a computer with an expert system
2. select and answer the questions and allow the system to compute information

Learning Activities Specification

The users will use the expert system as a job aid. The expert system for tourists will follow a step-by-step presentation: 1. The expert system will ask the user a question concerning place, event, or useful information.

2. The user of the expert system will respond to each question by selecting the appropriate number.
3. The expert system will give an appropriate information response to the user's selection.

The knowledge engineering step will then post on outline and identify a flow chart, matrix, and a rule base. See Appendix C.

Assessment System Specification

An assessment system is necessary when developing an instructional system. However, this is not applicable to an expert system.

Evaluation System Specification

The evaluation system used in the project provided for both formative and summative evaluation. The formative evaluation took place during the development of the expert system. It was used to improve the effectiveness of the expert system. The summative evaluation determined the value or worth of the expert system. The evaluation does not measure learning. The expert system provides only information for tourists.

Learning Transfer System Specification

Since this expert system is designed to be a job aid, therefore it can not be considered as learning transfer. The main purpose of this system is to give information to users.

Review and Selection of Existing Materials

No relevant materials were identified during the analysis phase of the project.

Summary

Task analysis was described to identify the knowledge and skills needed to perform the task in each goal. An instructional objective (performance, condition, and criteria) was provided as well as desired entry behavior. The learning activity was described step by step. The evaluation system and existing materials were also included.

CHAPTER 4

DEVELOPMENT

Introduction

Development is the third phase in the five-phase model presented in the project. This chapter will describe the learning activity development scheme. A learning activity review and material for evaluation will be presented. The knowledge engineering steps included in the development phase include the following: implement PROLOG language program and setup the database, discuss and evaluate step by step, create the design material, program and debug, and test and review until it gives the correct results.

Learning Activity Development Scheme

The scheme for learning activity development was to write the code for the expert system, provide one working rule, and then complete all other rules.

First, the designer wrote a code for THAI.PRO according to Borland (1988). Second, she decided on the sequence of predicate declarations. Rules were developed in code form along with predicates and clauses.

The designer set up information according to one rule under the clause section and made it run successfully. After the program ran, all the other information could be added as additional rules to complete the system. The remaining knowledge engineering steps were implemented in the PROLOG language program, and setup of the database was completed.

Learning Activity Development

The expert system was produced using the Turbo PROLOG language from Borland International. The program consisted of seven types of information: first, how to get there; second, the regional location; third, major regional events; fourth, major place of interest; fifth, festivals and annual events; sixth, transportation in Thailand; and seventh, useful information. All of them were targeted for first-time visitors visiting Thailand for vacation. First, the designer established a flow chart, fact group, and rules. They are shown in Appendix C. The next step was to build an actual program. The code, database, predicates, goal, and one clause were made. The program was run successfully. Then the window colors were selected and necessary modifications completed. After the first clause ran successfully, the

designer continued to build the program. More information was then put in an additional clauses. The knowledge engineering programming and debugging procedures were completed. The complete expert system program listing in PROLOG code called THAI.PRO is shown in Appendix D. The screen information relating to each screen is included in Appendix E.

Learning Activity Review

A review of the expert system was completed by the designer. Current information for visiting Thailand was obtained from Tourism Authority of Thailand. Books published in Thailand were also reviewed to ensure that the information in the system was up to date. The designer performed an editing type review to ensure that all parts of the instruction were present and formed a complete product that responded to the design. The accuracy and appropriateness of the grammar, style, and punctuation of the information were also reviewed by the designer. She then presented it to a native language English speaker for additional review. Corrections were noted and implemented. The knowledge engineering tests and reviews were repeated until the system gave correct results with no error identified.

Material for Evalation Produced

Four copies of the expert system program disk were produced. They were used to conduct the formative evaluation.

Summary

In the development phase, the designer created the expert system called THAI.PRO. The expert system was programmed in the Turbo PROLOG language. The expert system was utilized through a MS/DOS IBM compatible personal computer. Debugging, spelling, grammar, and review information were completed. Copies of the expert system program disk were produced to conduct the formative evaluation processes.

CHAPTER 5

IMPLEMENTATION

Introduction

Implementation is the fourth of the five phases that will be discussed in the project. This chapter will describe that implementation. Data collection is also presented. It was time to deliver the expert system. The knowledge engineering steps were as follows: install hardware and software, allocate system resource, schedule the user, and deliver the software.

Materials for Implementation Reproduced

The final copies of the expert system were reproduced for the instructional delivery. Four completed software packages and program listings were produced and sent to the tourist information of Thailand located in New York and Thailand for use.

Instructional Delivery

At the completion of the development process, ten participants tested the expert system. The expert system was demonstrated by using an IBM compatible computer at the

Tourist Information of Thailand located in the World Trade Center, New York, where the people who came to the office to get information tried this expert sytem. The expert system consists of four different input/output information screens. When the user starts the expert system, the first screen displays a brief welcome to Thailand and the name of the developer. By pressing any key to continue, the second screen displays the main menu, listing seven different categories of information to be selected. The user can select by pressing the number of the information desired. The final screen displays the information resulting from the selected previous screen. The screen display and the response are summarized in Appendix E. The time allocated for each person to use an expert system was approximately five minutes. After a number of people used the expert system, suggestions were noted to improve the program.

Data Collection

During the implementation data was collected. The questionnaire was completed by each user and collected. The data collected included comments concerning the appropriateness of the topic and the information presented. See Appendix F.

Summary

This chapter described the instructional delivery and data collected. Screen displays and responses were produced. The whole system has been tested at tourist information of Thailand.

CHAPTER 6

EVALUATION

Introduction

Evaluation is the final phase of the five phases model presented in this project. In this chapter, formative and summative evaluation processes are described.

The knowledge engineering steps for this chapter are: collect data, make diagnosis, and update obsolete information. Obviously, the last step cannot be performed on a new system. The project time will not permit description of eventual updating.

Formative Evaluation

The effectiveness of the expert system was determined in the formative evaluation. Dick & Carey (1985) described the formative evaluation as the collection of data to revise the instructional materials, to make the materials as effective as possible (p.198).

This formative evaluation involves the collection of data, identification of problems, revisions, and implementation. As the formative evaluation was completed,

the designer used the data that was collected from this evaluation to revise the contents of the systems. Formative evaluation included one-on-one trials, small group trials, and a pilot test.

One-on-One Trials

The one-on-one evaluation served both to identify and remove the most obvious errors in the expert system and to obtain initial reactions to the content from users. These were accomplished through direct interaction between the designer and individual users. During this stage, the designer worked individually with her friends who were the representatives of the target population.

The one-on-one evalution was conducted. The designer worked with four participants at New York Institute of Technology in a computer laboratory as they worked through the expert system. During this time, the problems were noted and corrections were made. Problems were also encountered with users who needed help to start the PROLOG expert system on the computer. Spelling and grammar errors were also encountered. After the program started, the expert system ran smoothly and gave an appropriate response to questions asked.

Small Group Trials

The purpose of a small group is identified by Dick & Carey (1985). The first is to determine the effectiveness of changes made following the one-on-one evaluation and to identify any remaining problems that users may have. The second purpose is to determine if users can use the instruction without interaction with the instructor.

There were eight people who participated in the small group evaluation. It occurred at New York Institute of Technology in a computer room on the fourth floor. The designer sat quietly with them while they used the expert system. Review of the expert system was similar to that of one-on-one evaluation. These people gave suggestions for improvement. If possible, the system should provide a number of screens to cover more information. A short explanation for some events should be considered. Words, grammar, and spelling were corrected.

Pilot Test

During the pilot test, the expert system disk was sent to the Tourist Information of Thailand located in New York. Fifteen people who were interested in going to Thailand participated in this pilot test. They found the expert

system to be very useful and effective. It provided information in a very short time. Suggestions based on the pilot test were that the expert system should include the appropriate translation or explanation of events that are named in the Thai language. For example, under major events and festivals, the program listed Songran April 13. Songran, meaning the old Thai New Year, is an occasion for merrymaking ing in Bangkok as well as in other parts of the country it includes religious ceremonies as well as public festivities. Anyone who ventures out on the streets is likely to get a thorough soaking but all in a spirit of fun and welcomed at the peak of the hot season. Increased information about Songran will be helpful to the user. The time provided for the user to get information was five minutes.

Summative Evaluation

The summative evaluation was based on the four levels described by Kirkpatrick (1976). These levels include reaction, learning, behavior, and results.

Reaction

As described by Kirkpatrick, "Reaction may best be defined as how well the users like a particular program." Reaction

is the same as measuring the feeling of conferees or those who attend a class. This step is to measure the users' reaction to the expert system. It was desirable to determine how the users felt about the expert system. Four copies of the corrected expert system program disk were produced and sent to the Tourist Information of Thailand for implementation. The verbal summative evaluation feedback indicated that the expert system was useful and quick.

Level	Question
1. Reaction	Were the participants pleased with the program?
2. Learning	What did the participants learn in the program?
3. Behavior	Did the participants learn in the program?
4. Results	Did the change in behavior positively affect the organization?

Learning

Learning is defined as the principles, facts, and techniques that were understood and absorbed. It also included the attitudes that were changed. This project does not involve learning since this is an expert system. This expert system is not design to teach the user, only to help perform a task. This expert system was not designed to modify attitudes.

Behavior

Behavior is defined as a change in behavior that results from a program. The people at the Tourist Information of Thailand who had already used the expert system for the summative evaluation were satisfied with the program. Reported behavioral changes were as follows:

1. They have begun to rely upon the expert system since it can give quick information.
2. They have begun to rely upon the expert system since they can access broad and varied information.

Results/Impact

This project was not designed for a specific organization. Results cannot be measured for this project. However, this expert system had some impact on the users. It helped to eliminate the time needed to find information which is broad and varied. Futhermore, use of this expert system is less time consuming and more effective.

Learning Transfer

As a matter of fact, this expert system is not really a learning transfer. According to Broad (1988) it must provide actions supporting transfer of training in three periods: before, during, and after training.

Action supporting transfer of training

	Designer	User
Before	collect data, design program	seek information, find source
During	implement program	get information
After	evaluate	utilize information

Summary

This chapter discussed the formative and summative evaluation. One-on-one trails, small group trials, pilot test, reaction, learning, behavior, and result/impact were conducted. The information was corrected and updated.

CHAPTER 7

SUMMARY AND RECOMMENDATION

Introduction

This chapter is a summary of the contents described in this project. It also includes recommendations.

Methods and Procedures Used

The methods used to develop the expert system for this project were based on interservice procedures for Instructional System Development (ISD) (Center for Education Technology 1976). The ISD model included analysis, design, development, implement, and evaluation.

Analysis

Analysis is the first of the five phases presented in this project. In this step needs, job, and target population analysis were described and the instructional goal was defined. The designer surveyed literature, as well as existing course and review material. Project planning documents including PERT and Gantt charts were constructed and project cost was also presented.

Design

In the design step, an instructional task analysis was defined. An instructional objective (performance, condition, and criteria) was defined as was entry behavior. Learning activity and evaluation systems were described. Review and selection of existing material were also described.

Development

In the development phase, a learning activity development scheme was described (as were the learning development activity and learning activity review). The designer created the expert system called THAI.PRO. The expert system was programmed in the Turbo PROLOG language. The expert system was utilized through a MS/DOS IBM compatible personal computer. Debugging, spelling, grammar, and review of information were completed. Copies of the expert system program disk were produced to conduct the implementation and summative evaluation processes.

Implementation

Implementation is the fourth of the five phases ISD system presented in this project. This step described the implementation process. The instructional delivery and data collection were presented. Allocated system resources and the

schedule of users were also mentioned.

Evaluation

Evaluation is the final phase of the five phases model presented in this project. Formative evaluation included one-on-one trial, small group trial, and pilot test; summative evaluation based on Kirkpatrick (1976) was also conducted. These included reaction, learning, behavior, and result/impact. The information was corrected and updated.

Conclusion

The expert system is an appropriate job aid for tourists and interested individuals who plan to go to Thailand for vacation. The topics and contents presented were appropriate for the user. An expert system can quickly provide information on a topic of personal interest that may be broad, varied and previously unknown to the user. The results of the program were very satisfactory. It was certainly worth the effort to design and develop this project.

Recommendations

After the successful completion of the expert system, the following recommendations are suggested for further improvement:

1. The contents of the program could be extended to culture, daily life, business, etc.
2. The designer should provide short explanations for some events that are named in the Thai language, such as Makha Puja; full moon day, February, national holiday. This commemorates the occasion when 1,250 disciples spontaneously gathered to hear the Buddha preach. Merit-making, such as offering food to monks and freeing captive birds and fishes, is interspersed with sermons throughout the day. After sunset Buddhist monks lead the laity in a lovely triple candlelit circumambulation of Buddhist chapels throughout the kingdom. Each person silently carries flowers, glowing incense, and lighted candles in homage to the Buddha, his teaching and his disciples.
3. The number of screens could be increased in order to cover more information.

4. The expert system should be updated as needed due to changes in events.

Concluding Statement

This project was primarily developed for the sake of my country -- Thailand. The focus of this project has been the precise image perceived by Thai citizens. American are not well informed about Thailand.

Secondly, this project would be very useful for the Thailand Tourist Organization to help develop an effective program for American tourists.

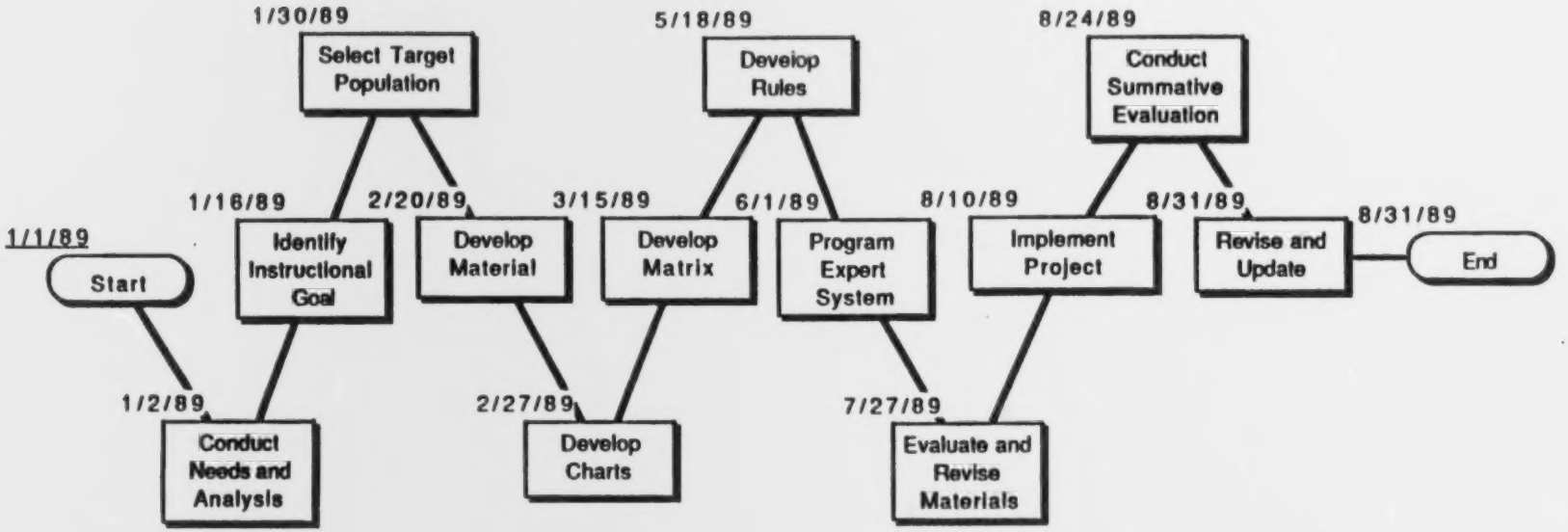
Finally, I wish everyone who plans to go to Thailand to enjoy the beautiful scenes, culture, tradition as well as the implicit spirit of the country.

Great time and effort was invested to the developing of the expert system described in this project. With my strong desire to be the best, I hope that the target population will benefit from this program.

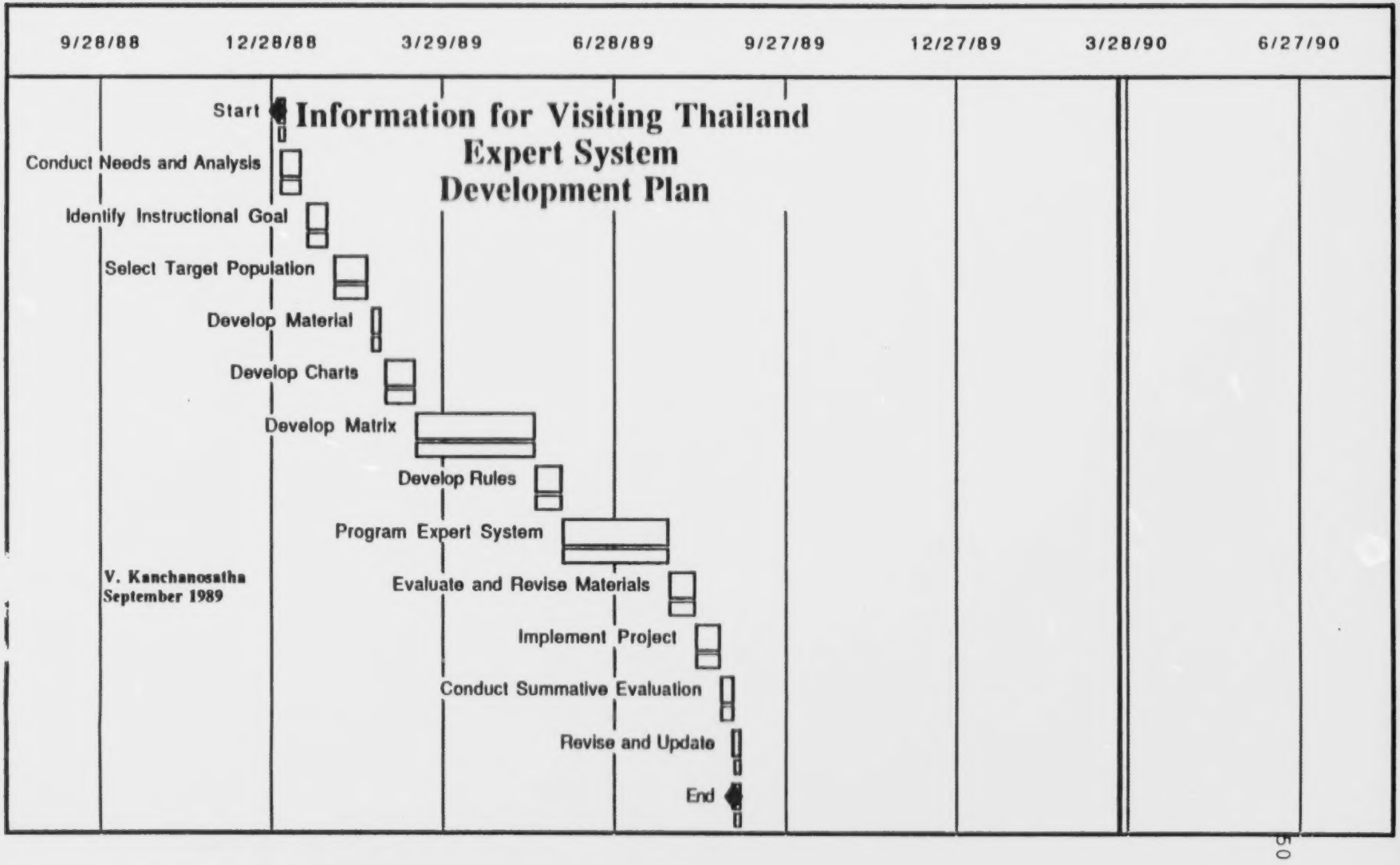
APPENDIX A

PERT, GANTT CHART

Information for Visiting Thailand
Expert System
Development Plan



V. Kanchanosatha
September 1989


9/28/88
12/28/88
3/29/89
6/28/89
9/27/89
12/27/89
3/28/90
6/27/90
Information for Visiting Thailand
Expert System
Development Plan
Start
Conduct Needs and Analysis
Identify Instructional Goal
Select Target Population
Develop Material
Develop Charts
Develop Matrix
Develop Rules
Program Expert System
Evaluate and Revise Materials
Implement Project
Conduct Summative Evaluation
Revise and Update
End
V. Kanchanosatha
September 1989

APPENDIX B

TASK ANALYSIS

Job Task

Task : Provide an information for visiting Thailand for vacation

Information for visiting Thailand

1. Identifies how to get there
    1.1. By air
    1.2. By rail
    1.3. By road
    1.4. By sea

2. Identifies the regional location
    2.1. Central
    2.2. North
    2.3. Northeast
    2.4. East coast
    2.5. South

3. Identifies major regional Events
    3.1. Central
    3.2. North
    3.3. Northeast
    3.4. East coast
    3.5. South

4. Identifies major place of interest
    4.1. Central
    4.2. North
    4.3. Northeast
    4.4. East coast
    4.5. South

5. Identifies festivals and annual events
    5.1. January / February
    5.2. March / April
    5.3. May / June
    5.4. July / August
    5.5. September / October
    5.6. November / December

6. Identifies transportation in Thailand
    6.1. Travel within Thailand
    6.2. Travel inside Bangkok

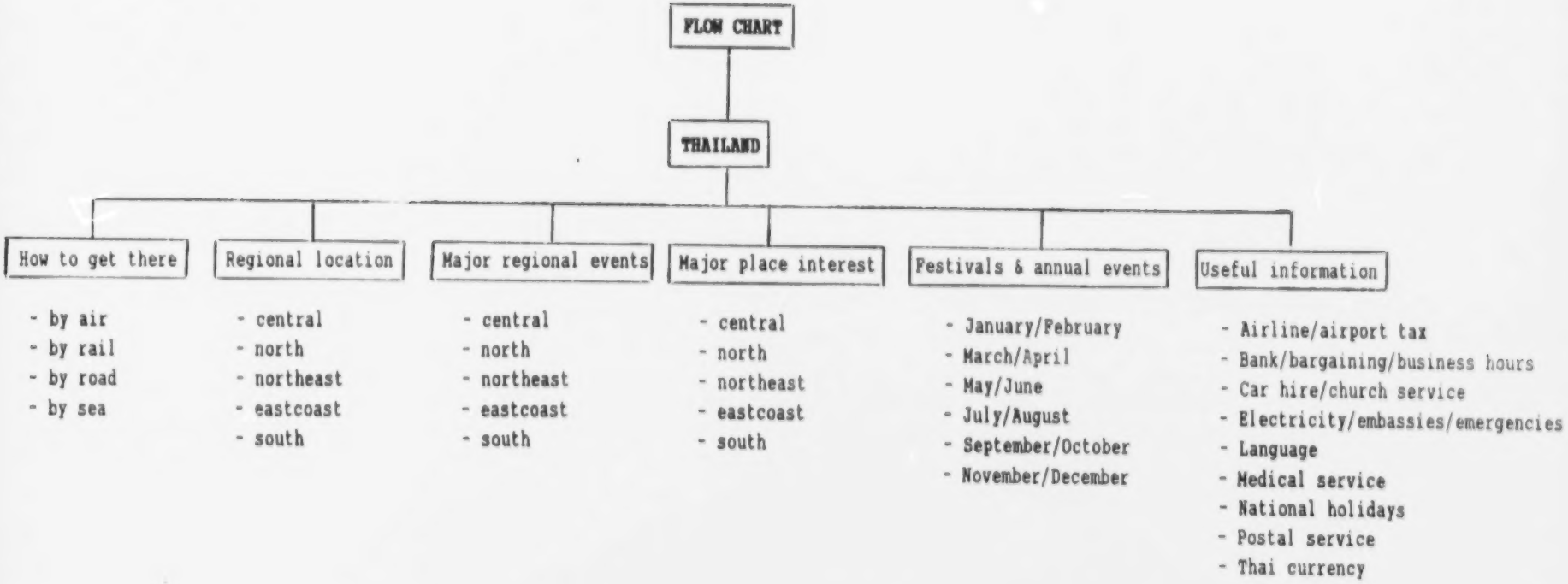
7. Identifies other useful information
    7.1. Airlines / Airport tax
    7.2. Bank / Bargaining / Business hours
    7.3. Car hire / Church service / Currency
    7.4. Electricity / Embassies / Emergencies
    7.5. Language
    7.6. Medical service
    7.7. National holidays
    7.8. Postal service
    7.9. Thai currency

Entry Behavior

Interested to go to Thailand for vacation.

APPENDIX C

FLOW CHART, MATRIX, AND RULES


FLOW CHART
THAILAND
How to get there
- by air
- by rail
- by road
- by sea
Regional location
- central
- north
- northeast
- eastcoast
- south
Major regional events
- central
- north
- northeast
- eastcoast
- south
Major place interest
- central
- north
- northeast
- eastcoast
- south
Festivals & annual events
- January/February
- March/April
- May/June
- July/August
- September/October
- November/December
Useful information
- Airline/airport tax
- Bank/bargaining/business hours
- Car hire/church service
- Electricity/embassies/emergencies
- Language
- Medical service
- National holidays
- Postal service
- Thai currency

MATRIX

Interest	Place	Route	Region	Months	Information
How to get there		by air			
How to get there		by rail			
How to get there		by road			
How to get there		by sea			
Regional located			central		
Regional located			north		
Regional located			northeast		
Regional located			eastcoast		
Regional located			south		
Major regional events			central		
Major regional events			north		
Major regional events			northeast		
Major regional events			eastcoast		
Major regional events			south		
Major place interest			central		
Major place interest			north		
Major place interest			northeast		
Major place interest			eastcoast		
Major place interest			south		
Festivals & annual events				January/February	
Festivals & annual events				March/April	
Festivals & annual events				May/June	
Festivals & annual events				July/August	
Festivals & annual events				September/October	
Festivals & annual events				November/December	
Transportation	within Thailand				
Transportation	inside Bangkok				
Useful information					Airline
Useful information					Bank
Useful information					Car hire
Useful information					Electrictcity
Useful information					Language
Useful information					Medical service
Useful information					National holiday
Useful information					Postal service
Useful information					Currency

RULES

1 If the interest is how to get there
and the route is by air
then the answer is the information of how to get there by air

2 If the interest is how to get there
and the route is by rail
then the answer is the information of how to get there by rail

3 If the interest is how to get there
and the route is by road
then the answer is the information of how to get there by road

4 If the interest is how to get there
and the route is by sea
then the answer is the information of how to get there by sea

5 if the interest is regional location
and the region is central
then the answer is the information of regional location of central

6 if the interest is regional location
and the region is north
then the answer is the information of regional location of north

7 if the interest is regional location
and the region is northeast
then the answer is the information of regional location of northeast

8 if the interest is regional location
and the region is eastcoast
then the answer is the information of regional location of eastcoast

9 if the interest is regional location
and the region is south
then the answer is the information of regional location of south

10 If the interest is major regional events
and the region is central
then the answer is the information of major regional events for central

11 If the interest is major regional events
and the region is north
then the answer is the information of major regional events for north

12 If the interest is major regional events
and the region is northeast
then the answer is the information of major regional events for northeast

13 If the interest is major regional events
and the region is eastcoast
then the answer is the information of major regional events for eastcoast

14 If the interest is major regional events
and the region is south
then the answer is the information of major regional events for south

15 If the interest is major place interest
and the region is central
then the answer is the major place interest for central

16 If the interest is major place interest
and the region is north
then the answer is the major place interest for north

17 If the interest is major place interest
and the region is northeast
then the answer is the major place interest for northeast

18 If the interest is major place interest
and the region is eastcoast
then the answer is the major place interest for eastcoast

19 If the interest is major place interest
and the region is south
then the answer is the major place interest for south

20 If the interest is festivals & annual events
and the months are January/ February
then the answer is the festivals & annuals events for January/February

21 If the interest is festivals & annual events
and the months are March/April
then the answer is the festivals & annuals events for March/April

22 If the interest is festivals & annual events
and the months are May/June
then the answer is the festivals & annuals events for May/June

23 If the interest is festivals & annual events
and the months are July/August
then the answer is the festivals & annuals events for July/August

24 If the interest is festivals & annual events
and the months are September/October
then the answer is the festivals & annuals events for September/October

25 If the interest is festivals & annual events
and the months are November/December
then the answer is the festivals & annuals events for November/December

26 If the interest is transportation
and the the place is within Thailand
then the answer is travel within Thailand

27 If the interest is transportation
and the interest is inside Bangkok
then the answer is travel inside Bangkok

28 If the information is useful information
and the interest is airline
then the answer is airline information

29 If the information is useful information
and the interest is Bank
then the answer is Bank information

30 If the information is useful information
and the interest is car hire
then the answer is car hire information

31 If the information is useful information
and the interest is electricity
then the answer is electricity information

32 If the information is useful information
and the interest is language
then the answer is language information

33 If the information is useful information
and the interest is medical service
then the answer is medical service information

34 If the information is useful information
and the interest is national holidays
then the answer is national holidays information

35 If the information is useful information
and the interest is postal service
then the answer is postal service information

36 If the information is useful information
and the interest is currency
then the answer is currency

APPENDIX D

PROGRAM LISTING

```
/*      INFORMATION FOR VISITING THAILAND EXPERT SYSTEM

*/

code=3072
database
     dbase(symbol,char)

predicates
     run
     title
     question(symbol)
     interest(symbol)
     menu(symbol,char)
     check(symbol)
     clear_facts
     response(char)
     repeat
     run_once
     information(symbol)

goal
     Makewindow (1,10,29,"Thailand : Golden places, smiling faces",0,0,24,80),
     write("\n\n\n       We are very pleased  to introduce you to the  wonders and  beauties of"),
     write("\n   Thailand, 'The Land of Smiles'"),
     write("\n       Thailand, literally translated, means 'Land of the Freedom', was known"),
     write("\n   for centuries to an outsiders as Siam. A predominant Buddhist Kingdom, the"),
     write("\n   country today enjoys its own  distinctive  culture, its own  language, its"),
     write("\n   own  cuisine, its  own  customs and  traditions and its  own  beliefs  and"),
     write("\n   attitudes. A tropical land  bordered by  Burma to  the  west, Laos to  the"),
     Write("\n   north,Kampuchea to the east and  Malaysia to the south  posseses a variety"),
     write("\n   of unique and  charming  characteristics  which  attract tourists from all"),
     write("\n   over the world destined to Southeast Asea."),
     write("\n\n                Copy right by Vinita Kanchanosatha 1990"),
     write("\n                      all rights reserved"),
     write("\n\n            By selecting the following questions regarding"),
     write("\n         the interest and the region, this expert system will"),
     write("\n                provide the appropriate information,"),
     write("\n\n   Press any key to continue,"),

     readchar(_),
     Makewindow (1,10,29,"THAILAND : Golden places, smiling faces",0,0,24,80),

     run.

clauses

     run :-
        run_once,
        clear_facts,
        write(" Would you like another information? "),
        readchar(Reply),
```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```
   write(Reply),nl,
   Reply='y',
   run.

run_once :-
   title,nl,question(_),!,clear_facts.

run_once :-
   write('\n The information furnished is'),nl,
   write(' inconsistent. We are unable to '),nl,
   write(' present an appropriate information. \n'),clear_facts.
title :-
   clearwindow,
   write('INFORMATION FOR VISITING THAILAND'),nl,nl.

repeat.
repeat :- repeat.

clear_facts:-
   retract(dbase(_,_)),fail.

   clear_facts :- nl.

check(X) :-
   dbase(X,'y'),!.

check(X) :-
   dbase(X,'n'),!,fail.

menu(Z,X) :-
   dbase(Z,Y),X=Y,!.

menu(main_menu,X) :-
   not(dbase(main_menu,_)),
   repeat,
   title,
   write(' What is the information that you are interested? '),nl,nl,
   write('  1) How to get there'),nl,
   write('  2) The regional location'),nl,
   write('  3) Major regional events'),nl,
   write('  4) Major place interest'),nl,
   write('  5) Festival & Annual events'),nl,
   write('  6) Transportation in Thailand'),nl,
   write('  7) Useful information'),nl,nl,
   write(' Press the number that indicates your selection: '),
   response(Reply),
   char_int(Reply,Z),
   Z<94,Z>48,!,
   assert(dbase(main_menu,Reply)),
   X=Reply.

menu(region,X) :-
   not(dbase(region,_)),
   repeat,
```

```
    title,
    write(' What is the region that you are interested?'),nl,nl,
    write('  1) Central'),nl,
    write('  2) North'),nl,
    write('  3) Northeast'),nl,
    write('  4) East Coast'),nl,
    write('  5) South'),nl,nl,
    write(' Press the number that indicates your selection: '),
    response(Reply),
    clearwindow,
    char_int(Reply,Z),
    Z<94,Z>48,!,
    assert(dbase(region,Reply)),
    X=Reply.

menu(route,X) :-
    not(dbase(route,_)),
    repeat,
    title,
    write(' Which way do you prefer?'),nl,nl,
    write('  1) by air'),nl,
    write('  2) by rail'),nl,
    write('  3) by road'),nl,
    write('  4) by sea'),nl,nl,nl,
    write(' Press the number that indicates your selection: '),
    response(Reply),
    clearwindow,
    char_int(Reply,Z),
    Z<94,Z>48,!,
    assert(dbase(route,Reply)),
    X=Reply.

menu(month,X) :-
    not(dbase(month,_)),
    repeat,
    title,
    write(' When you planned to go?'),nl,nl,
    write('  1) January or February'),nl,
    write('  2) March or April'),nl,
    write('  3) May or June'),nl,
    write('  4) July or August'),nl,
    write('  5) September or October'),nl,
    write('  6) November or December'),nl,nl,nl,
    write(' Press the number that indicates your selection: '),
    response(Reply),
    clearwindow,
    char_int(Reply,Z),
    Z<94,Z>48,!,
    assert(dbase(month,Reply)),
    X=Reply.

menu(trans,X) :-
    not(dbase(trans,_)),
```

```
        repeat,
        title,
        write(" Where do you want to travel?"),nl,nl,
        write("  1) Travel within Thailand"),nl,
        write("  2) Travel inside Bangkok"),nl,nl,nl,nl,
        write(" Press the number that indicates your selection: "),
        response(Reply),
        clearwindow,
        char_int(Reply,Z),
        Z<94,Z>48,!,
        assert(dbase(trans,Reply)),
        X=Reply.

    menu(info,X) :-
        not(dbase(info,_)),
        repeat,
        title,
        write(" What is the information that you would like to know?  "),nl,nl,
        write("  1) Airline / Airport tax"),nl,
        write("  2) Bank / Bargaining / Business hours"),nl,
        write("  3) Car hire / Church service"),nl,
        write("  4) Electricity / Embassies / Emergencies"),nl,
        write("  5) Language"),nl,
        write("  6) Medical service"),nl,
        write("  7) National holidays"),nl,
        write("  8) Postal service"),nl,
        write("  9) Thai currency"),nl,nl,
        write(" Press the number that indicates your selection: "),
        response(Reply),
        clearwindow,
        char_int(Reply,Z),
        Z<94,Z>48,!,
        assert(dbase(info,Reply)),
        X=Reply.

response(Reply) :-
        readchar(Reply),
        write(Reply),nl.

    question(how_to_get_there_1) :-
        menu(main_menu,'1'),
        menu(route,'1'),
        interest(route_air).

    question(how_to_get_there_2) :-
        menu(main_menu,'1'),
        menu(route,'2'),
        interest(route_rail).

    question(how_to_get_there_2) :-
        menu(main_menu,'1'),
        menu(route,'3'),
        interest(route_road).
```

```
question(how_to_get_there_4) :-
   menu(main_menu,'1'),
   menu(route,'4'),
   interest(route_sea).

question(region_located_1) :-
   menu(main_menu,'2'),
   menu(region,'1'),
   interest(located_central).

question(region_located_2) :-
   menu(main_menu,'2'),
   menu(region,'2'),
   interest(located_north).

question(region_located_3) :-
   menu(main_menu,'2'),
   menu(region,'3'),
   interest(located_northeast).

question(region_located_4) :-
   menu(main_menu,'2'),
   menu(region,'4'),
   interest(located_east_coast).

question(region_located_5) :-
   menu(main_menu,'2'),
   menu(region,'5'),
   interest(located_south).

question(major_region_events_1) :-
   menu(main_menu,'3'),
   menu(region,'1'),
   interest(region_central).

question(major_region_events_2) :-
    menu(main_menu,'3'),
    menu(region,'2'),
    interest(region_north).

question(major_region_events_3) :-
   menu(main_menu,'3'),
   menu(region,'3'),
   interest(region_northeast).

question(major_region_events_4) :-
   menu(main_menu,'3'),
   menu(region,'4'),
   interest(region_east_coast).

question(major_region_events_5) :-
   menu(main_menu,'3'),
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    menu(region,'5'),
    interest(region_south).

question(place_interest_1) :-
    menu(main_menu,'4'),
    menu(region,'1'),
    interest(place_central).

question(place_interest_2) :-
    menu(main_menu,'4'),
    menu(region,'2'),
    interest(place_north).

question(place_interest_3) :-
    menu(main_menu,'4'),
    menu(region,'3'),
    interest(place_northeast).

question(place_interest_4) :-
    menu(main_menu,'4'),
    menu(region,'4'),
    interest(place_east_coast).

question(place_interest_5) :-
    menu(main_menu,'4'),
    menu(region,'5'),
    interest(place_south).

question(festival_and_annual_events_1) :-
    menu(main_menu,'5'),
    menu(month,'1'),
    interest(month_jan_feb).

question(festival_and_annual_events_2) :-
    menu(main_menu,'5'),
    menu(month,'2'),
    interest(month_mar_apr).

question(festival_and_annual_events_3) :-
    menu(main_menu,'5'),
    menu(month,'3'),
    interest(month_may_jun).

question(festival_and_annual_events_4) :-
    menu(main_menu,'5'),
    menu(month,'4'),
    interest(month_jul_aug).

question(festival_and_annual_events_5) :-
    menu(main_menu,'5'),
    menu(month,'5'),
    interest(month_sep_oct).
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question(festival_and_annual_events_6) :-
     menu(main_menu,'5'),
     menu(month,'6'),
     interest(month_nov_dec).

question(transportation_1) :-
     menu(main_menu,'6'),
     menu(trans,'1'),
     interest(travel_within_Thailand).

question(transportation_2) :-
     menu(main_menu,'6'),
     menu(trans,'2'),
     interest(travel_inside_bangkok).

question(useful_information_1) :-
     menu(main_menu,'7'),
     menu(info,'1'),
     interest(information_airline).

question(useful_information_2) :-
     menu(main_menu,'7'),
     menu(info,'2'),
     interest(information_bank).

question(useful_information_3) :-
     menu(main_menu,'7'),
     menu(info,'3'),
     interest(information_car_hire).

question(useful_information_4) :-
     menu(main_menu,'7'),
     menu(info,'4'),
     interest(information_electricity).

question(useful_information_5) :-
     menu(main_menu,'7'),
     menu(info,'5'),
     interest(information_language).

question(useful_information_6) :-
     menu(main_menu,'7'),
     menu(info,'6'),
     interest(information_medical_service).

question(useful_information_7) :-
     menu(main_menu,'7'),
     menu(info,'7'),
     interest(information_national_holidays).

question(useful_information_8) :-
     menu(main_menu,'7'),
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```
        menu(info,'8'),
        interest(information_postal_service).

    question(useful_information_9) :-
        menu(main_menu,'7'),
        menu(info,'9'),
        interest(information_Thai_currency).

/*  sample code for selection type question

check(place_interest) :-
    title,
    write ('central region'),
    response(Reply),
    assert(dbase(place_interest,Reply)),Reply='y'.
*/
    interest(route_air) :-
      information(route_air).

    interest(route_rail) :-
      information(route_rail).

    interest(route_road) :-
      information(route_road).

    interest(route_sea) :-
      information(route_sea).

    interest(located_central) :-
      information(located_central).

    interest(located_north) :-
      information(located_north).

    interest(located_northeast) :-
      information(located_northeast).

    interest(located_east_coast) :-
      information(located_east_coast).

    interest(located_south) :-
      information(located_south).

    interest(region_central) :-
      information(region_central).

    interest(region_north) :-
      information(region_north).

    interest(region_northeast) :-
      information(region_northeast).

    interest(region_east_coast) :-
```

```
  information(region_east_coast).

interest(region_south) :-
  information(region_south).

interest(place_central) :-
  information(place_central).

interest(place_north) :-
  information(place_north).

interest(place_northeast) :-
  information(place_northeast).

interest(place_east_coast) :-
  information(place_east_coast).

 interest(place_south) :-
   information(place_south).

 interest(month_jan_feb) :-
   information(month_jan_feb).

 interest(month_mar_apr) :-
   information(month_mar_apr).

 interest(month_may_jun) :-
   information(month_may_jun).

 interest(month_jul_aug) :-
   information(month_jul_aug).

 interest(month_sep_oct) :-
   information(month_sep_oct).

 interest(month_nov_dec) :-
   information(month_nov_dec).

 interest(travel_within_Thailand) :-
   information(travel_within_Thailand).

 interest(travel_inside_Bangkok) :-
   information(travel_inside_Bangkok).

 interest(information_airline) :-
   information(information_airline).

 interest(information_bank) :-
   information(information_bank).

 interest(information_car_hire) :-
   information(information_car_hire).

 interest(information_electricity) :-
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      information(information_electricity).

    interest(information_language) :-
      information(information_language).

    interest(information_medical_service) :-
      information(information_medical_service).

    interest(information_national_holidays) :-
      information(information_national_holidays).

    interest(information_postal_service) :-
      information(information_postal_service).

    interest(information_Thai_currency) :-
      information(information_Thai_currency).

information(route_air) :-
    write(""),nl,
    write(" VISITING THAILAND BY AIR"),nl,
    write(" ************************"),nl,nl,
    write("     Bangkok is Thailand's major gateway. Most visitors arrive"),nl,
    write(" through Bangkok's Don Muang International Airport which is"),nl,
    write(" connected by daily flights to Europe, North America, Asia and"),nl,
    write(" Australia aboard the world's major airlines"),nl,
    write("     Further international flights, from Singapore, Kuala Lumpur,"),nl,
    write(" Penang and Hong Kong,land on a less regular basis at the Southern"),nl,
    write(" airports of Phuket and Hat Yai"),nl,
    write("     Charter flights from Europe and the Orient sometimes land in"),nl,
    write(" Bangkok, Phuket, Chaing Mai, Hat Yai and at U-Taphao for Pattaya."),nl,
    write(""),nl.

information(route_rail) :-
    write(""),nl,
    write("   VISITING THAILAND BY RAIL"),nl,
    write("   *************************"),nl,nl,
    write("       Regular rail service between Singapore and Bangkok."),nl,
    write("   Intermediary stops include Kuala Lumpur, Butterworth,"),nl,
    write("   and major southern Thai towns."),nl,
    write(""),nl.

information(route_road) :-
    write(""),nl,
    write("   VISITING THAILAND BY ROAD"),nl,
    write("   *************************"),nl,nl,
    write("       Overland entrance to Thailand is restricted to"),nl,
    write("   three road crossings on the Thai-Malaysia border in"),nl,
    write("   Songkhla, Yala and Narathiwat."),nl,
    write(""),nl.

 information(route_sea) :-
    write(""),nl,
    write("   VISITING THAILAND BY SEA"),nl,
    write("   ************************"),nl,nl,
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    write('       There is no regular steamship connections with'),nl,
    write('   Thailand. Cargo ships calling at Bangkok's Khlong Toei'),nl,
    write('   port sometimes have passenger cabin facilities. Cruise'),nl,
    write('   ships, such as Cunard's Queen Elizabeth II, Royal Viking,'),nl,
    write('   or Pearl of Scandinavia periodically visit Pattaya.'),nl,
    write(''),nl.

information(located_central) :-
    write(''),nl,
    write(' LOCATION FOR THE CENTRAL REGION'),nl,
    write(' ******************************'),nl,
    write('      Geographically, The Central Region extends from rugged western mountain'),nl,
    write(' bordering  Burma to the northeast plateau to the east; extends northwards to'),nl,
    write(' NAKHON SAWAN where the Ping, Wang, Nan, Yom  rivers unite to form the  Menam'),nl,
    write(' Chao Phraya(River of Kings) which flows southwards to dissect Bangkok before'),nl,
    write(' entering the  Gulf of Thailand; and  southwards to PRACHUAP  KHIRIKHAN where'),nl,
    write(' Thailand  is  compressed to its  narrowest point, some  60 kilometres  wide,'),nl,
    write(' between western mountains and the Thai Gulf.'),nl,
    write('      The Menam Chao Phraya largely irrigates the  Central  Plain, one of the'),nl,
    write(' world's major rice and fruit-growing areas,and sustains an intricate network'),nl,
    write(' of canals that irrigates bountiful orchards and market gardens; host vibrant'),nl,
    write(' floating  markets;  and  support a unique, waterborne way of life.'),nl,
    write('      The Central Region is extremely rich in historical sites. These include'),nl,
    write(' BANG PA-IN, AYUTTHAYA, NAKHON PATHOM, KANCHANABURI, SARABURI, LOP BURI  and,'),nl,
    write(' most important of all, BANGKOK, Thailand's capital and major point-of-entry.'),nl,
    write(''),nl.

information(located_north) :-
    write(''),nl,
    write(' LOCATION FOR THE NORTH'),nl,
    write(' **********************'),nl,
    write('      Bordered by Burma and Laos, characterised by forested mountains -lower'),nl,
    write(' extremities of  Himalayan foothills - and  fertile river  valleys, northern'),nl,
    write(' Thailand encompasses part of the fabled Golden Triangle and  was the cradle'),nl,
    write(' of Thai civilization where, several centuries ago,small independent kingdom'),nl,
    write(' held sway.'),nl,
    write('      In 1238 the aptly named SUKHOTHAI (Dawn of Happiness) became the first'),nl,
    write(' truly  independent  Thai kingdom  where the  Thai alphabet was  created and'),nl,
    write(' nascent art forms developed.'),nl,
    write('      Diverse elements, including crisp mountain scenery,exotic hill tribes,'),nl,
    write(' forests worked by elephants, colourful festivals, invigorating  Cool Season'),nl,
    write(' weather,ancient cities, exquisite northern Thai and Burmeses-style temples,'),nl,
    write(' and friendly people contribute to northern Thailand's enduring charm'),nl,
    write(''),nl.

information(located_northeast) :-
    write(''),nl,
    write(' LOCATION FOR THE NORTHEAST'),nl,
    write(' **************************'),nl,
    write('      Known by  Thais as I-SAN, the sprawling  northeast plateau is  bordered'),nl,
    write(' to the north and east by the Mekong River and Laos, and to the south largely'),nl,
    write(' by Kampuchea.'),nl,
    write('      The Northeast is a distinctive regions thanks to a topography of lovely'),nl,
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    write(" forested  mountains and national parks and rolling farmland; to its colorful"),nl,
    write(" inhabitants who speak their own melodious dialect, have a  delicious  highly"),nl,
    write(" spiced cuisine, and a hospitable, vibrant and often  times  boisterous  folk"),nl,
    write(" culture; and because of archaeologically significant excavations and shrines"),nl,
    write(" such as BAN CHAING where the world's oldest Bronze Age civilization flourish"),nl,
    write(" some 5,600 year ago; and venerable Prasat Hin (stone castle) temples, legacy"),nl,
    write(" of I-SAN's former importance to the Angkor-centred Khmer empire."),nl,
    write(""),nl.

information(located_east_coast) :-
    write(""),nl,
    write(" LOCATION FOR THE EAST COAST"),nl,
    write(" ***************************"),nl,
    write("      Beyond BANGKOK, from the estuary of the Chao Phraya River, the East"),nl,
    write(" coast unfolds in a series of bays and beaches  to the  Thai-Kampuchean"),nl,
    write(" border. Many popular resorts, including PATAYA, Asia's premier beach resort,"),nl,
    write(" occupy a coast characterised  by  cliff-hidden,  palm-fringed  beaches,"),nl,
    write(" innumerable fishing communities, lovely islands and largly tranquil Gulf"),nl,
    write(" water"),nl,
    write("      The region is rich in natural resources, including rubber, rice,"),nl,
    write(" rubber orchards and gemstones, and scenically arresting with several"),nl,
    write(" national park containing waterfalls, virgin forest and uninhabited,"),nl,
    write(" remote island."),nl,
    write(""),nl.

information(located_south) :-
    write(""),nl,
    write(" LOCATION FOR THE SOUTH"),nl,
    write(" **********************"),nl,
    write("      Lush tropical islands, dazzling palm-fringed beaches, coral reefs"),nl,
    write(" teeming with colourful marine life, picturesque  fishing villages with"),nl,
    write(" distinctive hand-painted boats, remote national parks,forest mountains"),nl,
    write(" waterfalls,historic cities, ubiquitous rubber estates, scenic wildlife"),nl,
    write(" sanctuaries."),nl,
    write("      Geographically, southern Thailand extends through the Kra Isthmus"),nl,
    write(" from CHUMPORN, 460 kilometres south of BANGKOK, to the  Thai-Malaysian"),nl,
    write(" bordered in  the east by  the Gulf of  Thailand, to the  west  by  the"),nl,
    write(" Indian Ocean."),nl,
    write(""),nl.

 information(region_central) :-
    write(""),nl,
    write(" MAJOR REGIONAL EVENTS FOR THE CENTRAL REGION"),nl,
    write(" ********************************************"),nl,nl,
    write(" JANUARY  :  Straw Bird Procession Fair.....................Chai Nat"),nl,
    write("             Kam Fa Festival...............................Sing Buri"),nl,
    write("             Don Chedi Memorial Fair.....................Suphanburi"),nl,
    write("             Pha Nakhon Khiri Fair.......................Phetchaburi"),nl,
    write(" FEBRUARY :  Phra Buddha Baht Festival.....................Saraburi"),nl,
    write("             (Buddha's Footprint Shrine)"),nl,
    write(" APRIL    :  Red Cross Fair.................................Bangkok"),nl,
    write("             Kite Festival.................................Bangkok"),nl,
    write("             Songkran Water Festival.....................Samut Prakarn"),nl,
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    write(' JULY      :  Buddhist Rains Retreat Flower Offering.....Saraburi'),nl,
    write(' OCTOBER   :  Pha Chedi Klang Nam Fair.............Samut Prakarn'),nl,
    write(' NOVEMBER  :  Golden Mount Fair.....................Bangkok'),nl,
    write('              Phra Pathom Chedi Fair...............Nakhon Pathom'),nl,
    write(' DECEMBER  :  River Kwai Bridge Week...............Kanchanaburi'),nl,
    write('              Boat Races.............................Angthong'),nl,
    write(''),nl.

information(region_north) :-
    write(''),nl,
    write(' MAJOR REGIONAL EVENTS FOR THE NORTH'),nl,
    write(' ***********************************'),nl,nl,
    write(' JANUARY   :  Winter Fair...........................Chaing Mai'),nl,
    write(' FEBRUARY  :  Flower Festival.......................Chaing Mai'),nl,
    write('              Chiness New Year Festival............Nakhon Sawan'),nl,
    write(' APRIL     :  Songkran Water Festival...............Chaing Mai'),nl,
    write('              Poi Sang Long Fair...................Mae Hong Son'),nl,
    write(' MAY       :  Lychee Fair.................Chaing Rai & Chaing Mai'),nl,
    write(' AUGUST    :  Longan Fair.............................Chaing Mai'),nl,
    write(' SEPTEMBER:   Boat Races.................................Pichit'),nl,
    write('              Langsat Fair..........................Uttaradit'),nl,
    write(' OCTOBER   :  Boat Races.................................Nan'),nl,
    write(' NOVEMBER  :  Loi Krathong..............Sukhothai & Chaing Mai'),nl,
    write('              (Festival of Lights)'),nl,
    write(''),nl.

information(region_northeast) :-
    write(''),nl,
    write(' MAJOR REGIONAL EVENTS FOR THE NORTHEAST'),nl,
    write(' ***************************************'),nl,nl,
    write(' JANUARY   :  Ruam Pho Thai Fair.....................Mukdahan'),nl,
    write(' FEBRUARY  :  Cotton Blossom Fair.....................Loei'),nl,
    write('              Phra That Phanom Fair...............Nakhon Phanom'),nl,
    write(' MARCH     :  Bird Fair.............................Chaiyaphum'),nl,
    write('              Thao Suranari Fair..................Nakhon Ratchasima'),nl,
    write(' MAY       :  Bang Fai Rocket Festival.....................Yasothon'),nl,
    write(' JUNE      :  Phi Ta Khon Fair.............................Leoi'),nl,
    write(' JULY      :  Candle Festival.....................Ubon Ratchathani'),nl,
    write(' OCTOBER   :  Wax Castle Festival & Boat Races.....Sakon Nakhon'),nl,
    write('              Illuminated Boat Procession & Boat Race..Nakhon Phanom'),nl,
    write('              Boat Races..........................Nakhon Ratchasima'),nl,
    write(''),nl.

information(region_east_coast) :-
    write(''),nl,
    write(' MAJOR REGIONAL EVENTS FOR THE EAST COAST'),nl,
    write(' ****************************************'),nl,nl,
    write(' APRIL     :  Annual Pattaya Festival.....................Pattaya'),nl,
    write(' JUNE      :  Fruits Fair.....................Chanthaburi & Rayong'),nl,
    write('              Sunthon Phu Memorial Fair.....................Rayong'),nl,
    write(' OCTOBER   :  Annual Buffalo Races.....................Chonburi'),nl,
    write('              Post-Rains Retreat Celebrations.............Bang Phli'),nl,
    write(''),nl.
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information(region_south) :-
      write(""),nl,
      write(" MAJOR REGIONAL EVENTS FOR THE SOUTH"),nl,
      write(" ***********************************"),nl,nl,
      write(" MAY      :  Lak Muang Fair.....................................Yala"),nl,
      write("             Thai Products & Fruits Fair.....................Songkhla"),nl,
      write(" SEPTEMBER:  Tenth Lunar Month Festival.....Nakhon Si Thammarat"),nl,
      write("             Boat Races.....................................Narathiwat"),nl,
      write(" OCTOBER  :  Chak Phra Festival & Boat Races.............Surat Thani"),nl,
      write("             Vegetarian Festival.............................Phuket"),nl,
      write(""),nl.

information(place_central) :-
      write(""),nl,
      write(" MAJOR PLACE INTEREST FOR THE CENTRAL REGION"),nl,
      write(" ******************************************"),nl,
      write(" BANGKOK : Wat PhraKaeo (Emeral Buddha Chapel), Wat Arun (Temple of Dawn),"),nl,
      write("           Wat Pho (Temple of the reclining buddha), Wat Saket (Gold Mount),"),nl,
      write("           Pastuer institute's snake farm, Crocodile farm, Siam water park"),nl,
      write("           Dusit zoo, Jim Thomson's Thai house."),nl,
      write(" NAKHON PHATHOM : the world's tallest Buddhist monument."),nl,
      write(" DAMNOENSADUAK : Thailand's virbrant floating market where farmer congregate"),nl,
      write("                 on canals each morning in produce-laden boats."),nl,
      write(" KANCHANABURI : Bridge Over The River Kwai, an Allied war cemetery."),nl,
      write(" AYUTTHAYA : Siamese capital from 1350 to 1767. Magnificent ruin of temple."),nl,
      write(" LOP BURI : an ancient city dating from 9th century."),nl,
      write(" CHA AM : popular beachside."),nl,
      write(" HUA HIN : oldest beach and has been the Thai royal family's summer residence"),nl,
      write("           since1920s."),nl,
      write(""),nl.

information(place_north) :-
      write(""),nl,
      write(" MAJOR PLACE INTEREST FOR THE NORTH"),nl,
      write(" ********************************"),nl,
      write(" SUKHOTHAI : is notable for massive  sentinel stone  Buddha  images  that"),nl,
      write("             preside over ruins within the old city walls."),nl,
      write(" LAMPANG : is  the  sole  provincial  Thai  capital  where  horse-drawn"),nl,
      write("           carriages remain daily use."),nl,
      write(" LAMPHUN : is famed for beautiful women, bountiful orchards and a classic"),nl,
      write("           example of northern religious architecture."),nl,
      write(" CHAING MAI : pricipal northern city, was  founded in 1296 and is located"),nl,
      write("              in a fertile valley some 1,000 feet above sea level. Chaing"),nl,
      write("              Mai is famous for beautiful women, historic  temple  dating"),nl,
      write("              from  the  1300s,  crisp  mountain  scenery,  distinctive"),nl,
      write("              festivals and  handcrafts, and  several formerly  itinerant"),nl,
      write("              hill tribes of Tibeto-Burman origin."),nl,
      write(" MAE HONG SON : the tiniest and most isolated northern capital,  nestling"),nl,
      write("                in a valley surrounded by  mountains  containing  several"),nl,
      write("                hill tribes and Burmese-style temples."),nl,
      write(""),nl.

information(place_northeast) :-
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      write(""),nl,
      write(' MAJOR PLACE INTEREST FOR THE NORTHEAST'),nl,
      write(' ***************************************'),nl,
      write('    NAKHON RATCHASIMA, is the gate way to I-SAN.11th-cetury Prasat Hin temple'),nl,
      write(' one of the loveliest examples of classical Khmer architecture found  outside'),nl,
      write(' Kampuchea. Other major I-San attraction include KHON KAEN, a university town'),nl,
      write(' and famous for its Mat Mi silk; Leoi province's PHU KRA DUENG  National Park'),nl,
      write(' a cripsy beautiful forested plateau between 1,000 - 1,350 metres where night'),nl,
      write(' time temperatures drop to near freezing point; CHAING KHAN, scenic SI CHAING'),nl,
      write(' MAI to NONGKHAI road which largely parallels the Mekong River; UDON  THANI's'),nl,
      write(' BAN CHAING  village and museum which house  priceless  Bronze  Age  jewelry;'),nl,
      write(' NAKHON PHANOM's  Phra That  Phanom, the most revered  Northeast shrine; UBON'),nl,
      write(' RATCHATHANI, introduce the annual Buddhist Rains Retreat with  lovely Candle'),nl,
      write(' Festival; YASOTHON, where summer, massive homemade rockets are ceremoniously'),nl,
      write(' fired into the air to ensure bountiful rains; SURIN, where an elephant round'),nl,
      write(' Up each November attracts visitors from all over the world; BURIRUM's Prasat'),nl,
      write(' Hin Phanom Rung, a lovely hilltop  Khmer  sanctuart once  connected by  road'),nl,
      write(' with Angkor.'),nl,
      write(""),nl.

information(place_east_coast) :-
      write(""),nl,
      write(' MAJOR PLACE INTEREST FOR THE EAST COAST'),nl,
      write(' ***************************************'),nl,
      write('       BANGSAEN, is the capital's nearest resort; Bang Phra Golf Course, is a'),nl,
      write(' self-contained holiday complex with air conditioned motor lodge facilities,a'),nl,
      write(' swimming pool; Khao Khiao Open Zoo, a 1200-acre  hillside  setting, favorite'),nl,
      write(' Asian, African and European mammals occupy spacious enclosures; SI RACHA, is'),nl,
      write(' a fishing community famed for a delicious, tangy sauce and excellent seafood'),nl,
      write(' PATTAYA, is Thailand's Riviera and internationally famous beach resort; Bang'),nl,
      write(' Sare  fishing  village, from where game  fishermen seek marlin, sharks, king'),nl,
      write(' mackerel,tuna and other Gulf denizens; RAYONG, is best know for its  Ban Phe'),nl,
      write(' fishing village and the narrow, 6-kilometre long Samet island;  CHANTHABURI,'),nl,
      write(' is famous for historic sites, Thailand's  largest Christian church,  locally'),nl,
      write(' mined star sapphires, bountiful orchards and the Khao Khitchakut and  Namtok'),nl,
      write(' Phlui national parks which contain attractive waterfalls.'),nl,
      write(""),nl.

information(place_south) :-
      write(""),nl,
      write(' MAJOR PLACE INTEREST FOR THE SOUTH'),nl,
      write(' ***********************************'),nl,
      write('       CHUMPORN, has several lovely beaches, birds'nest island and excellent'),nl,
      write(' scuba diving waters; RANONG, has a Hot Spa Health Resort drawing water from'),nl,
      write(' Thailand's sole potable Geo-Thermal Mineral Water Spring; SURAT THANI, is'),nl,
      write(' best known for the beautiful KO SAMUI,Thailand's second largest island;'),nl,
      write(' NAKHON SI THAMMARAT is a ancient city; SONGKHLA, albeit sleepy town with a'),nl,
      write(' thriving fishing community and lovely Samila beach ; NARATHIWAT, border'),nl,
      write(' Malaysia, Tarutao Marine National Park, Thai coast near the Thai-Malaysia'),nl,
      write(' maritime border; HAT YAI,is southern Thailand's principal commercial;'),nl,
      write(' Trang's Khao Chong Nature Reserve; Krabi's major attractions are the Phi Phi'),nl,
      write(' island and the 75-million-year-old Susan Hoi shell graveyard, one of the'),nl,
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      write(' only three in the world; PHANG NGA's major attraction is the early beautiful'),nl,
      write(' PHANG NGA Bay where verdant limestone islands; PHUKET,is Thailand's largest'),nl,
      write(' island (the approximate size of Singapore), and has probably the best'),nl,
      write(' seafood in Thailand.'),nl.

information(month_jan_feb) :-
      write(''),nl,
      write(' FESTIVALS & ANNUAL EVENTS FOR JANUARY/FEBRUARY'),nl,
      write(' ********************************************'),nl,
      write(' January :'),nl,
      write(' 10-11    Chaiyaphum Elephant Round Up.............Chaiyaphum'),nl,
      write(' 14-21    Bo Sang Umbrella Fair.....Bo Sang, Chaing Mai'),nl,
      write(' 20-31    Dragon and Lion Parade.................Nakhon Sawan'),nl,
      write(' 24-31    Don Chedi Memorial Fair.................Suphan Buri'),nl,
      write(' 26-1Feb  Straw Bird Fair.............................Chai Nat'),nl,
      write(' 27-4Feb  Phra Nakhon Khiri Fair...................Petchaburi'),nl,nl,
      write(' February :'),nl,
      write(' 2-3      Luang Wiang Lakon.........................Lampang'),nl,
      write(' 2-4      Flower Festival...........................Chaing Mai'),nl,
      write(' 7-13     Chao Mae Lim Ko Nieo Fair.................Pattani'),nl,
      write(' 9        Magha Puja................................Nationwide'),nl,
      write(' 9-15     Phra Buddha Chinarat Fair...............Phitsanulok'),nl,
      write(' Feb-Apr  Kite Fighting & Traditional Thai Sports......Bangkok'),nl,
      write(''),nl.

information(month_mar_apr) :-
      write(''),nl,
      write(' FESTIVALS & ANNUAL EVENTS FOR MARCH/APRIL'),nl,
      write(' ******************************************'),nl,
      write(' March :'),nl,
      write(' 3-4    Barred Ground Dove Festival.....................Yala'),nl,
      write(' 3-10   Phra Buddha Bat Fair.........................Saraburi'),nl,
      write(' 12-14  Bangkok International Jewelry Fair...........Bangkok'),nl,nl,
      write(' April :'),nl,
      write(' 7-8    Sweet Grape Fair.....................Damnoen Saduak'),nl,
      write(' 8-16   Phra Padaeng Songkran Festival.........Samut Prakan'),nl,
      write(' 12-14  Songkran.....................................Bangkok'),nl,
      write(' 13-15  Chaing Mai Songkran Festival.............Chaing Mai'),nl,
      write(' 13-15  Thailand International Kite Festival.........Pattaya'),nl,
      write(' 13-19  Pattaya Festival............................Pattaya'),nl,
      write(''),nl.

information(month_may_jun) :-
      write(''),nl,
      write(' FESTIVALS & ANNUAL EVENTS FOR MAY/JUNE'),nl,
      write(' ***************************************'),nl,
      write(' May : '),nl,
      write(' 8      Visakha Puja.............................Nationwide'),nl,
      write(' 11     Royal Ploughing Ceremony...................Bangkok'),nl,
      write(' 12-13  Rocket Festival............................Yasothon'),nl,
      write(' 19-21  Lychee Fair..............................Chaing Rai'),nl,nl,
      write(' June :'),nl,
      write(' 1-10   Rayong Fruit Fair..........................Rayong'),nl,
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      write(' 7-11   Chanthaburi Fruit Fair.................Chanthaburi'),nl,
      write(''),nl.

information(month_Jul_aug) :-
      write(''),nl,
      write(' FESTIVALS & ANNUAL EVENTS FOR JULY/AUGUST'),nl,
      write(' ****************************************'),nl,
      write(' July :'),nl,
      write(' 6-8    Candle Festival.....................Ubon Ratchathani'),nl,
      write(' 8      Tak Bat Dok Mai (merit-Making Festival)......Saraburi'),nl,nl,
      write(' August :'),nl,
      write(' 12     The Queen's Birthday Celebration...........Nationwide'),nl,
      write(''),nl.

information(month_sep_oct) :-
      write(''),nl,
      write(' FESTIVALS & ANNUAL EVENTS FOR SEPTEMBER/OCTOBER'),nl,
      write(' ************************************************'),nl,
      write(' 1-7    Food & Fruit Fair.............................Nakhon Pathom'),nl,
      write(' 7-9    Pichit Boat Races.....................................Pichit'),nl,
      write(' 12-16  Bangkok Gems & Jewelry Fair.........................Bangkok'),nl,
      write(' 13-22  Festival of the Tenth Lunar Month.......Nakhon Si Thammarat'),nl,
      write(' 19-23  Kluai Khai Banana Festival...................Kamphaeng Phet'),nl,
      write(' 28-7   Thai Leather Goods'90.............................Bangkok'),nl,
      write(' 30-3   Wax Castle Festival...........................Sakon Nakhon'),nl,nl,
      write(' October :'),nl,
      write(' 1-9    Chak Phra Festival.............................Surat Thani'),nl,
      write(' 4      Chon Buri Buffalo Races.........................Chon Buri'),nl,
      write(' 5      Tak Bat Devo....................................Uthai Thani'),nl,
      write(' 17-26  Vegetarian Festival.........................Phuket & Trang'),nl,
      write(' 31-2   Loi Krathong & Candle Festival...................Sukhothai'),nl,
      write(''),nl.

information(month_nov_dec) :-
      write(''),nl,
      write(' FESTIVALS & ANNUAL EVENTS FOR NOVEMBER/DECEMBER'),nl,
      write(' ************************************************'),nl,
      write(' November :'),nl,
      write(' 1-3    Yi Peng Loi Krathong.........................Chaing Mai'),nl,
      write(' 17-18  Surin Elephant Round-Up.............................Surin'),nl,
      write(' 28-5   River Kwai Bridge Week.....................Kanchanaburi'),nl,
      write(' 29-8   Silk Fair.....................................Khon Kaen'),nl,
      write(' 30-9   Made in Thailand.................................Bangkok'),nl,nl,
      write(' December :'),nl,
      write(' 5      The King's Birthday Celebration..............Nationwide'),nl,
      write(' 21-30  Gift Show'90.....................................Bangkok'),nl,
      write('        Phuket King's Cup Regatta 1990...................Phuket'),nl,
      write(''),nl.

information(travel_within_Thailand) :-
      write(''),nl,
      write(' TRAVEL WITHIN THAILAND'),nl,
      write(' ***********************'),nl,
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      write(' By air - Thai Airways International, Thailand's nation airline,'),nl,
      write('          flies to five  destinations in the north, five in the'),nl,
      write('          northeast, and seven in the south. Reservation can be'),nl,
      write('          made through any authorized Thai Inter Travel Agent.'),nl,nl,
      write(' By Rail - An  efficient rail system  links  major northern  and'),nl,
      write('           northeastern towns with the capital. A southern route'),nl,
      write('           permits the visitor to travel by train into  Malaysia'),nl,
      write('           and Singapore. Domestic express trains comprise first,'),nl,
      write('           second and third-class seats.'),nl,nl,
      write(' By Road - A modern highway system reaches into all  corners  of the'),nl,
      write('           kingdom. Domestic bus services offer fast means of travel.'),nl,
      write('           Air conditioned tour coaches offer more comfort. Bangkok's'),nl,
      write('           Northern / Northeastern Bus  Terminal is an  Phahonyothin'),nl,
      write('           Road. Bangkok's  Southern  Bus  Terminal is  on  Pinklao-'),nl,
      write('           Nakhon Chaisri Road. Bangkok's  Eastern  Bus  Terminal is'),nl,
      write('           on Sukhumvit Road.').

information(travel_inside_Bangkok) :-
      write(''),nl,
      write(' TRAVEL INSIDE BANGKOK'),nl,
      write(' **********************'),nl,
      write(' Public Transportation - Public  bus are plentiful and inexpensive, with'),nl,
      write('                         3 baht minimum and 5 baht  maximum fare to most'),nl,
      write('                         destinations within  metropolitan Bangkok. Air-'),nl,
      write('                         conditioned buses within  Bangkok have  minimum'),nl,
      write('                         and maximum fares to 5 and 15 baht respectively'),nl,nl,
      write(' Taxi and Tuk Tuks - Hotel  taxi have  fixed  tariffs. Taxi  cruising  the'),nl,
      write('                     streets of  Bangkok  rarely  use their  meters. Fares'),nl,
      write('                     must be agree upon before starting off. Fares  within'),nl,
      write('                     Bangkok range from a minimum of 50 baht  to  150 baht.'),nl,
      write('                     Tuk-Tuk or three wheel taxis are quite popular  among'),nl,
      write('                     the tourists for short journeys inside Bangkok. Fares'),nl,
      write('                     range from 30 baht to 80 baht.'),nl,nl,
      write(' River Taxis - There are many boats plying the Chao Phraya  River. Some'),nl,
      write('               criss-cross between landings on opposite banks while the'),nl,
      write('               Chao Phraya Express boats travel upstream and downstream'),nl,
      write('               within the  metropolis. Fares range between 5 to 15 baht.').

information(information_airline) :-
      write(''),nl,
      write(' AIRLINES AND AIRPORT TAXS'),nl,
      write(' *************************'),nl,
      write(' Airlines - Some fifty airlines maintain offices in Bangkok.'),nl,
      write('            A complete listing may be found in the English'),nl,
      write('            edition of the Bangkok Telephone Directory's'),nl,
      write('            Yellow Pages.'),nl,nl,
      write(' Airport Taxs - Outgoing passengers on international flights'),nl,
      write('                from Bangkok's Don Muang airport must pay 200'),nl,
      write('                baht. 20 baht per person is collected for'),nl,
      write('                domestic flights.'),nl,
      write(''),nl.

information(information_bank) :-
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      write(""),nl,
      write(" BANK, BARGAINING, AND BUSINESS HOURS"),nl,
      write(" ************************************"),nl,
      write(" Bank - Banks provide standard services nationwide, Monday through"),nl,
      write("        Friday, except public and bank holiday, between 8.30 A.M."),nl,
      write("        and 3.30 P.M. Bank currency exchange centers operate from"),nl,
      write("        7.00 A.M. to 9.00 P.M., seven days a week, including holidays."),nl,nl,
      write(" Bargaining - Except in department stores where items have fixed prices,"),nl,
      write("              Bargaining is an accept practice throughout Thailand."),nl,nl,
      write(" Business Hours - Most commercial concern in Bangkok operate on a five-day"),nl,
      write("                  week. Government offices are generally open between 8.30"),nl,
      write("                  P.M. with a noon to 1.00 P.M. lunch break, Monday through"),nl,
      write("                  Friday except on public holidays."),nl,
      write(""),nl.

information(information_car_hire) :-
      write(""),nl,
      write(" CAR HIRE AND CHURCH SERVICE"),nl,
      write(" ***************************"),nl,
      write(" Car hire - The Bangkok Yellow Pages list local and international automobile"),nl,
      write("            rental companies. Visitors are advised to shop around since most"),nl,
      write("            company offer different conditions. Self-drive and chauffeur"),nl,
      write("            driven automobile are widely available. Car hire companies also"),nl,
      write("            operate in Pattaya, Hat Yai, Phuket, and Chaing Mai."),nl,nl,
      write(" Church Service - Christian churches are found in Bangkok and most provincial"),nl,
      write("                  capitals. Service are mostly in Thai, with certain service"),nl,
      write("                  in English, French, and Germany."),nl,
      write(""),nl.

information(information_electricity) :-
      write(""),nl,
      write(" ELECTRICITY, EMBASSIES, AND EMERGENCIES"),nl,
      write(" ***************************************"),nl,
      write(" Electricity - Thailand operates exclusively on 220 volt, 50 cycle "),nl,
      write("               AC power."),nl,nl,
      write(" Embassies - Some 50 countries maintain embassies, consulates or"),nl,
      write("             legation in Bangkok. Most are concentrated around the"),nl,
      write("             Sukhumvit, Phoenchit, Witthayu and Sathon Road areas."),nl,
      write("             A complete list of such missions is featured in the"),nl,
      write("             Yellow Pages of the English edition of the Bangkok"),nl,
      write("             Telephone Directory."),nl,nl,
      write(" Emergencies - Bi-lingual tourist police are attached to Tourism"),nl,
      write("               Authority of Thailand in Bangkok, Pattaya, Chaing"),nl,
      write("               Mai, Hat Yai, Phuket, and Kanchanaburi to provide"),nl,
      write("               speedy assistance to visitors."),nl,
      write(""),nl.

information(information_language) :-
      write(""),nl,
      write(" LANGUAGE"),nl,
      write(" ********"),nl,
      write("    Spoken and written Thai remain largely incomprehensible to"),nl,
      write(" the causual visitors. However, English is widely understood,"),nl,
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      write(' particularly in Bagkok where it is almost the major commercial'),nl,
      write(' language. English and other European languages are spoken in'),nl,
      write(' most hotels, shops and restaurants, in major tourist destinations,'),nl,
      write(' and Thai-English road and street signs are found nationwide.'),nl,
      write(''),nl.

information(information_medical_service) :-
      write(''),nl,
      write(' MEDICAL SERVICE'),nl,
      write(' ***************'),nl,
      write('    All tourism destinations and provincial'),nl,
      write(' capital have  hospitals and clinics  staffed by'),nl,
      write(' well-trained doctors and nurses.'),nl,
      write(''),nl.

information(information_national_holidays) :-
      write(''),nl,
      write(' NATIONAL HOLIDAYS'),nl,
      write(' ******************'),nl,
      write(' January   1..................................New Year's Day'),nl,
      write(' February  Full Moon Day.....................Makha Bucha'),nl,
      write(' April     6.....................................Charki Day'),nl,
      write(' April     12 - 14...............................Songkran'),nl,
      write(' May       5.................................Coronation day'),nl,
      write(' May       Full Moon Day.....................Wisakha Bucha'),nl,
      write(' July      Full Moon Day.....................Asanaha Bucha'),nl,
      write(' August    12.....................H.M. The Queen's Birthday'),nl,
      write(' October   23.............................Chulalongkorn Day'),nl,
      write(' December  5.....................H.M. The King's Birthday'),nl,
      write(' December  10.............................Constitution Day'),nl,
      write(' December  31.................................New Year's Eve'),nl,
      write(''),nl.

information(information_postal_service) :-
      write(''),nl,
      write(' POSTAL SERVICE'),nl,
      write(' **************'),nl,
      write('   Thailand's mail service is reliable and efficient.'),nl,
      write(' Major hotels provide basic postal servives on their'),nl,
      write(' premises. Bangkok's Central G.P.O. on New Road is open'),nl,
      write(' from 8.00AM to 6.00PM, Monday through Friday, and from'),nl,
      write(' 9.00AM to 1.00PM on Saturday, Sunday and public holidays.'),nl,
      write('   Telegrames may be sent at any time of the day or night.'),nl,
      write(' Upcountry post offices maintain similar hours, except that'),nl,
      write(' they close at 4.30 PM.'),nl,
      write(''),nl.

information(information_Thai_currency) :-
      write(''),nl,
      write(' THAI CURRENCY'),nl,
      write(' *************'),nl,
      write(' Thai currency - The Thai baht is worth about 4 cents.'),nl,
      write(' One US dollar = approximate 25 baht. The baht is divided'),nl,
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write(' into 100 satang. 'Copper' coins are valued at 25 and 50'),nl,
write(' satang. 'Silver' coins are in denominations of 1,2, and'),nl,
write(' 5 baht. Banknotes are valued at 10 baht(brown). 20 baht'),nl,
write(' (green), 50 baht (blue), 100 baht (red) and 500 baht (purple).'),nl,
write(' Tourist information - is available at the Tourism Authority'),nl,
write(' of Thailand head office in Bangkok and TAT information'),nl,
write(' counters in counters in Bangkok Airport and every airport'),nl,
write(' where there is TAT local office. In Thailand, each office's'),nl,
write(' information desk is open seven days a week, including public'),nl,
write(' holidays, round the year.'),nl,
write(''),nl.
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APPENDIX E

SCREEN SUMMARY

Thailand : Golden Place, Smiling Face

We are very pleased to introduce you to the wonders and beauties of Thailand, 'The Land of Smiles'

Thailand, literally translated, means 'Land of the Freedom', was known for centuries to an outsiders as Siam. A predominant Buddhist Kingdom, the country today enjoys its own distinctive culture, its own language, its own cuisine, its own customs and traditions and its own beliefs and attitudes. A tropical land bordered by Burma to the west, Laos to the north,Kampuchea to the east and Malaysia to the south posseses a variety of unique and charming characteristics which attract tourists from all over the world destined to Southeast Asea.

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By selecting the following questions regarding
the interest and the region, this expert system will
provide the appropriate information.

Question ?

What is the information that you are interested?
How to get there

Which way that you prefer?
By air

Answer

VISITING THAILAND BY AIR
****

Bangkok is Thailand's major gateway. Most visitors arrive through Bangkok's Don Muang International Airport which is connected by daily flights to Europe, North America, Asia and Australia aboard the world's major airlines

Further international flights, from Singapore, Kuala Lumpur, Penang and Hong Kong,land on a less regular basis at the Southern airports of Phuket and Hat Yai

Charter flights from Europe and the Orient sometimes land in Bangkok, Phuket, Chaing Mai, Hat Yai and at U-Taphao for Pattaya.

Question ?

What is the information that you are interested?
How to get there

Which way that you prefer?
By rail

Answer

VISITING THAILAND BY RAIL
****

Regular rail service between Singapore and Bangkok. Intermediary stops include Kuala Lumpur, Butterworth, and major southern Thai towns.

Question ?

What is the information that you are interested?
How to get there

Which way that you prefer?
By road

Answer

VISITING THAILAND BY ROAD
****

Overland entrance to Thailand is restricted to three road crossings on the Thai-Malaysia border in Songkhla, Yala and Narathiwat.

Question ?

What is the information that you are interested?
How to get there

Which way that you prefer?
By sea

Answer

VISITING THAILAND BY SEA
****

There is no regular steamship connections with Thailand. Cargo ships calling at Bangkok's Khlong Toei port sometimes have passenger cabin facilities. Cruise ships, such as Cunard's Queen Elizabeth II, Royal Viking, or Pearl of Scandinavia periodically visit Pattaya.

Question ?

What is the information that you are interested?
The regional location.

What is the region that you are interested?
Central

Answer

LOCATION FOR THE CENTRAL REGION
****

Geographically, The Central Region extends from rugged western mountain bordering Burma to the northeast plateau to the east; extends northwards to NAKHON SAWAN where the Ping, Wang, Nan, Yom rivers unite to form the Menam Chao Phraya(River of Kings) which flows southwards to dissect Bangkok before entering the Gulf of Thailand; and southwards to PRACHUAP KHIRIKHAN where Thailand is compressed to its narrowest point, some 60 kilometres wide, between western mountains and the Thai Gulf.

The Menam Chao Phraya largely irrigates the Central Plain, one of the world's major rice and fruit-growing areas,and sustains an intricate network of canals that irrigates bountiful orchards and market gardens; host vibrant floating markets; and support a unique, waterborne way of life.

The Central Region is extremely rich in historical sites. These include BANG PA-IN, AYUTTHAYA, NAKHON PATHOM, KANCHANABURI, SARABURI, LOP BURI and, most important of all, BANGKOK, Thailand's capital and major point-of-entry.

Question ?

What is the information that you are interested?
The regional location

What is the region that you are interested?
North

Answer

LOCATION FOR THE NORTH
****

Bordered by Burma and Laos, characterised by forested mountains -lower extremities of Himalayan foothills - and fertile river valleys, northern Thailand encompasses part of the fabled Golden Triangle and was the cradle of Thai civilization where, several centuries ago,small independent kingdom held sway.

In 1238 the aptly named SUKHOTHAI (Dawn of Happiness) became the first truly independent Thai kingdom where the Thai alphabet was created and nascent art forms developed.

Diverse elements, including crisp mountain scenery,exotic hill tribes, forests worked by elephants, colourful festivals, invigorating Cool Season weather,ancient cities, exquisite northern Thai and Burmeses-style temples, and friendly people contribute to northern Thailand's enduring charm

Question ?

What is the information that you are interested?
The regional location

What is the region that you are interested?
Northeast

Answer

LOCATION FOR THE NORTHEAST
****

Known by Thais as I-SAN, the sprawling northeast plateau is bordered to the north and east by the Mekong River and Laos, and to the south largely by Kampuchea.

The Northeast is a distinctive regions thanks to a topography of lovely forested mountains and national parks and rolling farmland; to its colorful inhabitants who speak their own melodious dialect, have a delicious highly spiced cuisine, and a hospitable, vibrant and often times boisterous folk culture; and because of archaeologically significant excavations and shrines such as BAN CHAING where the world's oldest Bronze Age civilization flourish some 5,600 year ago; and venerable Prasat Hin (stone castle) temples, legacy of I-SAN's former importance to the Angkor-centred Khmer empire.

Question ?

What is the information that you are interested?
The regional location

What is the region that you are interested?
East Coast

Answer

LOCATION FOR THE EAST COAST
****

Beyond BANGKOK, from the estuary of the Chao Phraya River, the East coast unfolds in a series of bays and beaches to the Thai-Kampuchean border. Many popular resorts, including PATAYA, Asia's premier beach resort, occupy a coast characterised by cliff-hidden, palm-fringed beaches, innumerable fishing communities, lovely islands and largly tranquil Gulf water

The region is rich in natural resources, including rubber, rice, rubber orchards and gemstones, and scenically arresting with several national park containing waterfalls, virgin forest and uninhabited, remote island.

Would you like another information?

Question ?

What is the information that you are interested?
The regional location.

What is the region that you are interested?
South

Answer

LOCATION FOR THE SOUTH
****

Lush tropical islands, dazzling palm-fringed beaches, coral reefs teeming with colourful marine life, picturesque fishing villages with distinctive hand-painted boats, remote national parks,forest mountains waterfalls,historic cities, ubiquitous rubber estates, scenic wildlife sanctuaries.

Geographically, southern Thailand extends through the Kra Isthmus from CHUMPORN, 460 kilometres south of BANGKOK, to the Thai-Malaysian bordered in the east by the Gulf of Thailand, to the west by the Indian Ocean.

Question?

What is the information that you are interested?
Major regional events

What region that you are interested?
Central

Answer

MAJOR REGIONAL EVENTS FOR THE CENTRAL REGION
****

JANUARY	:	Straw Bird Procession Fair.....Chai Nat
		Kam Fa Festival.....Sing Buri
		Don Chedi Memorial Fair.....Suphanburi
		Pha Nakhon Khiri Fair.....Phetchaburi
FEBRUARY	:	Phra Buddha Baht Festival.....Saraburi
		(Buddha's Footprint Shrine)
APRIL	:	Red Cross Fair.....Bangkok
		Kite Festival.....Bangkok
		Songkran Water Festival.....Samut Prakarn
JULY	:	Buddhist Rains Retreat Flower Offering.....Saraburi
OCTOBER	:	Pha Chedi Klang Nam Fair.....Samut Prakarn
NOVEMBER	:	Golden Mount Fair.....Bangkok
		Phra Pathom Chedi Fair.....Nakhon Pathom
DECEMBER	:	River Kwai Bridge Week.....Kanchanaburi
		Boat Races.....Angthong

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Question?

What is the information that you are interested?
Major regional events

What region that you are interested?
North

Answer

MAJOR REGIONAL EVENTS FOR THE NORTH
****

JANUARY	:	Winter Fair.....Chaing Mai
FEBRUARY	:	Flower Festival.....Chaing Mai
		Chiness New Year Festival.....Nakhon Sawan
APRIL	:	Songkran Water Festival.....Chaing Mai
		Poi Sang Long Fair.....Mae Hong Son
MAY	:	Lychee Fair.....Chaing Rai & Chaing Mai
AUGUST	:	Longan Fair.....Chaing Mai
SEPTEMBER	:	Boat Races.....Pichit
		Langsat Fair.....Uttaradit
OCTOBER	:	Boat Races.....Nan
NOVEMBER	:	Loi Krathong.....Sukhothai & Chaing Mai
		(Festival of Lights)

Question?

What is the information that you are interested?
Major regional events

What regional that you are interested?
Northeast

Answer

MAJOR REGIONAL EVENTS FOR THE NORTHEAST
****

JANUARY	:	Ruam Pho Thai Fair	Mukdahan
FEBRUARY	:	Cotton Blossom Fair	Loei
		Phra That Phanom Fair	Nakhon Phanom
MARCH	:	Bird Fair	Chaiyaphum
		Thao Suranari Fair	Nakhon Ratchasima
MAY	:	Bang Fai Rocket Festival	Yasothon
JUNE	:	Phi Ta Khon Fair	Leoi
JULY	:	Candle Festival	Ubon Ratchathani
OCTOBER	:	Wax Castle Festival & Boat Races	Sakon Nakhon
		Illuminated Boat Procession & Boat Race	Nakhon Phanom
		Boat Races	Nakhon Ratchasima

Question?

What is the information that you are interested?
Major regional events

What region that you are interested?
East Coast

Answer

MAJOR REGIONAL EVENTS FOR THE EAST COAST
****

APRIL	:	Annual Pattaya Festival.....Pattaya
JUNE	:	Fruits Fair.....Chanthaburi & Rayong
		Sunthon Phu Memorial Fair.....Rayong
OCTOBER	:	Annual Buffalo Races.....Chonburi
		Post-Rains Retreat Celebrations.....Bang Phli

Question?

What is the information that you are interested?
Major regional events

What region that you are interest?
South

Answer

MAJOR REGIONAL EVENTS FOR THE SOUTH
****

MAY	:	Lak Muang Fair.....Yala
		Thai Products & Fruits Fair.....Songkhla
SEPTEMBER:		Tenth Lunar Month Festival.....Nakhon Si Thammarat
		Boat Races.....Narathiwat
OCTOBER	:	Chak Phra Festival & Boat Races.....Surat Thani
		Vegetarian Festival.....Phuket

Question?

What is the information that you are interested?
Major place interest

What region that you are interest?
Central

Answer

MAJOR PLACE INTEREST FOR THE CENTRAL REGION
****
BANGKOK : Wat PhraKaeo (Emeral Buddha Chapel), Wat Arun (Temple of Dawn),
Wat Pho (Temple of the reclining buddha), Wat Saket (Gold Mount),
Pastuer institute's snake farm, Crocodile farm, Siam water park
Dusit zoo, Jim Thomson's Thai house.
NAKHON PHATHOM : the world's tallest Buddhist monument.
DAMNOENSADUAK : Thailand's virbrant floating market where farmer congregate
on canals each morning in produce-laden boats.
KANCHANABURI : Bridge Over The River Kwai, an Allied war cemetery.
AYUTTHAYA : Siamese capital from 1350 to 1767. Magnificent ruin of temple.
LOP BURI : an ancient city dating from 9th century.
CHA AM : popular beachside.
HUA HIN : oldest beach and has been the Thai royal family's summer residenc
since1920s.

Question ?

What is the information that you are interested?
Major place interested

What region that you are interested?
North

Answer

MAJOR PLACE INTEREST FOR THE NORTH
****

SUKHOTHAI : is notable for massive sentinel stone Buddha images that preside over ruins within the old city walls.

LAMPANG : is the sole provincial Thai capital where horse-drawn carriages remain daily use.

LAMPHUN : is famed for beautiful women, bountiful orchards and a classic example of northern religious architecture.

CHAING MAI : pricipal northern city, was founded in 1296 and is located in a fertile valley some 1,000 feet above sea level. Chaing Mai is famous for beautiful women, historic temple dating from the 1300s, crisp mountain scenery, distinctive festivals and handcrafts, and several formerly itinerant hill tribes of Tibeto-Burman origin.

MAE HONG SON : the tiniest and most isolated northern capital, nestling in a valley surrounded by mountains containing several hill tribes and Burmese-style temples.

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Question?

What is the information that you are interested?
Major place interest

What region that you are interested?
Northeast

Answer

MAJOR PLACE INTEREST FOR THE NORTHEAST
****

NAKHON RATCHASIMA, is the gate way to I-SAN.11th-cetury Prasat Hin temple one of the loveliest examples of classical Khmer architecture found outside Kampuchea. Other major I-San attraction include KHON KAEN, a university town and famous for its Mat Mi silk; Leoi province's PHU KRA DUENG National Park a cripsy beautiful forested plateau between 1,000 - 1,350 metres where night time temperatures drop to near freezing point; CHAING KHAN, scenic SI CHAING MAI to NONGKHAI road which largely parallels the Mekong River; UDON THANI's BAN CHAING village and museum which house priceless Bronze Age jewelry; NAKHON PHANOM's Phra That Phanom, the most revered Northeast shrine; UBON RATCHATHANI, introduce the annual Buddhist Rains Retreat with lovely Candle Festival; YASOTHON, where summer, massive homemade rockets are ceremoniously fired into the air to ensure bountiful rains; SURIN, where an elephant round Up each November attracts visitors from all over the world; BURIRUM's Prasat Hin Phanom Rung, a lovely hilltop Khmer sanctuart once connected by road with Angkor.

Question?

What is the information that you are interested?
Major place interest

Waht region that you are interested?
East Coast

Answer

MAJOR PLACE INTEREST FOR THE EAST COAST
****

BANGSAEN, is the capital's nearest resort; Bang Phra Golf Course, is a self-contained holiday complex with air conditioned motor lodge facilities,a swimming pool; Khao Khiao Open Zoo, a 1200-acre hillside setting, favorite Asian, African and European mammals occupy spacious enclosures; SI RACHA, is a fishing community famed for a delicious, tangy sauce and excellent seafood PATTAYA, is Thailand's Riviera and internationally famous beach resort; Bang Sare fishing village, from where game fishermen seek marlin, sharks, king mackerel,tuna and other Gulf denizens; RAYONG, is best know for its Ban Phe fishing village and the narrow, 6-kilometre long Samet island; CHANTHABURI, is famous for historic sites, Thailand's largest Christian church, locally mined star sapphires, bountiful orchards and the Khao Khitchakut and Namtok Phlui national parks which contain attractive waterfalls.

Question ?

What is the information that you are interested?
Major place interest

What region that you are interested?
South

Answer

MAJOR PLACE INTEREST FOR THE SOUTH
****

CHUMPORN, has several lovely beaches, birds'nest island and excellent scuba diving waters; RANONG, has a Hot Spa Health Resort drawing water from Thailand's sole potable Geo-Thermal Mineral Water Spring; SURAT THANI, is best known for the beautiful KO SAMUI,Thailand's second largest island; NAKHON SI THAMMARAT is a ancient city; SONGKHLA, albeit sleepy town with a thriving fishing community and lovely Samila beach ; NARATHIWAT, border Malaysia, Tarutao Marine National Park, Thai coast near the Thai-Malaysia maritime border; HAT YAI,is southern Thailand's principal commercial; Trang's Khao Chong Nature Reserve; Krabi's major attractions are the Phi Phi island and the 75-million-year-old Susan Hoi shell graveyard, one of the only three in the world; PHANG NGA's major attraction is the early beautiful PHANG NGA Bay where verdant limestone islands; PHUKET,is Thailand's largest island (the approximate size of Singapore), and has probably the best seafood in Thailand.

Question ?

What is the information that you are interested?
Festivals & annual events.

When you plan to go?
January/February

Answer

FESTIVALS & ANNUAL EVENTS FOR JANUARY/FEBRUARY

January :		
10-11	Chaiyaphum Elephant Round Up	Chaiyaphum
14-21	Bo Sang Umbrella Fair	Bo Sang, Chaing Mai
20-31	Dragon and Lion Parade	Nakhon Sawan
24-31	Don Chedi Memorial Fair	Suphan Buri
26-1Feb	Straw Bird Fair	Chai Nat
27-4Feb	Phra Nakhon Khiri Fair	Petchaburi
February :		
2-3	Luang Wiang Lakon	Lampang
2-4	Flower Festival	Chaing Mai
7-13	Chao Mae Lim Ko Nieo Fair	Pattani
9	Magha Puja	Nationwide
9-15	Phra Buddha Chinarat Fair	Phitsanulok
Feb-Apr	Kite Fighting & Traditional Thai Sports	Bangkok

Question ?

What is the information that you are interested?
Festivals & annual events

When do you plan to go?
March/April.

Answer

FESTIVALS & ANNUAL EVENTS FOR MARCH/APRIL
****

March :

3-4	Barred Ground Dove Festival	Yala
3-10	Phra Buddha Bat Fair	Saraburi
12-14	Bangkok International Jewelry Fair	Bangkok

April :

7-8	Sweet Grape Fair	Damnoen Saduak
8-16	Phra Padaeng Songkran Festival	Samut Prakan
12-14	Songkran	Bangkok
13-15	Chaing Mai Songkran Festival	Chaing Mai
13-15	Thailand International Kite Festival	Pattaya
13-19	Pattaya Festival	Pattaya

Question ?

What is the information that you are interested?
Festivals & annual events.

When do you plan to go?
May/June

Answer

FESTIVALS & ANNUAL EVENTS FOR MAY/JUNE
****

May :

8	Visakha Puja	Nationwide
11	Royal Ploughing Ceremony	Bangkok
12-13	Rocket Festival	Yasothon
19-21	Lychee Fair	Chaing Rai

June :

1-10	Rayong Fruit Fair	Rayong
7-11	Chanthaburi Fruit Fair	Chanthaburi

Question ?

What is the information that you are interested?
Festivals & annual events.

When do you plan to go?
July/August

Answer

FESTIVALS & ANNUAL EVENTS FOR JULY/AUGUST
****
July :
6-8 Candle Festival.....Ubon Ratchathani
8 Tak Bat Dok Mai (merit-Making Festival).....Saraburi

August :
12 The Queen's Birthday Celebration.....Nationwide

Question 2

What is the information that you are interested?
Festivals & annual events.

When do you plan to go?
September/October

Answer

FESTIVALS & ANNUAL EVENTS FOR SEPTEMBER/OCTOBER
****

1-7	Food & Fruit Fair	Nakhon Pathom
7-9	Pichit Boat Races	Pichit
12-16	Bangkok Gems & Jewelry Fair	Bangkok
13-22	Festival of the Tenth Lunar Month	Nakhon Si Thammarat
19-23	Kluai Khai Banana Festival	Kamphaeng Phet
28-7	Thai Leather Goods'90	Bangkok
30-3	Wax Castle Festival	Sakon Nakhon

October :

1-9	Chak Phra Festival	Surat Thani
4	Chon Buri Buffalo Races	Chon Buri
5	Tak Bat Devo	Uthai Thani
17-26	Vegetarian Festival	Phuket & Trang
31-2	Loi Krathong & Candle Festival	Sukhothai

Question ?

What is the information that you are interested?
Festivals & annual events.

When do you plan to go?
November/December

Answer

FESTIVALS & ANNUAL EVENTS FOR NOVEMBER/DECEMBER
****

November :

1-3	Yi Peng Loi Krathong	Chaing Mai
17-18	Surin Elephant Round-Up	Surin
28-5	River Kwai Bridge Week	Kanchanaburi
29-8	Silk Fair	Khon Kaen
30-9	Made in Thailand	Bangkok

December :

5	The King's Birthday Celebration	Nationwide
21-30	Gift Show'90	Bangkok
	Phuket King's Cup Regatta 1990	Phuket

Question ?

What is the information that you are interested?
Transportation in Thailand.

Where do you want to travel?
Travel within Thailand.

Answer

TRAVEL WITHIN THAILAND
****

By air - Thai Airways International, Thailand's nation airline, flies to five destinations in the north, five in the northeast, and seven in the south. Reservation can be made through any authorized Thai Inter Travel Agent.

By Rail - An efficient rail system links major northern and northeastern towns with the capital. A southern route permits the visitor to travel by train into Malaysia and Singapore. Domestic express trains comprise first, second and third-class seats.

By Road - A modern highway system reaches into all corners of the kingdom. Domestic bus services offer fast means of travel. Air conditioned tour coaches offer more comfort. Bangkok's Northern / Northeastern Bus Terminal is an Phahonyothin Road. Bangkok's Southern Bus Terminal is on Pinklao-Nakhon Chaisri Road. Bangkok's Eastern Bus Terminal is on Sukhumvit Road.

Question ?

What is the information that you are interested?
Transportation in Thailand.

Where do you want to travel?
Travel inside Bangkok.

Answer

TRAVEL INSIDE BANGKOK
****

Public Transportation - Public bus are plentiful and inexpensive, with 3 baht minimum and 5 baht maximum fare to most destinations within metropolitan Bangkok. Air-conditioned buses within Bangkok have minimum and maximum fares to 5 and 15 baht respectively

Taxi and Tuk Tuks - Hotel taxi have fixed tariffs. Taxi cruising the streets of Bangkok rarely use their meters. Fares must be agree upon before starting off. Fares within Bangkok range from a minimum of 50 baht to 150 baht. Tuk-Tuk or three wheel taxis are quite popular among the tourists for short journeys inside Bangkok. Fares range from 30 baht to 80 baht.

River Taxis - There are many boats plying the Chao Phraya River. Some criss-cross between landings on opposite banks while the Chao Phraya Express boats travel upstream and downstream within the metropolis. Fares range between 5 to 15 baht.

Question?

What is the information that you are interested?
Useful information

What information that you would like to see?
Airlines/ airport tax

Answer

AIRLINES AND AIRPORT TAXS
****
Airlines - Some fifty airlines maintain offices in Bangkok. A complete listing may be found in the English edition of the Bangkok Telephone Directory's Yellow Pages.

Airport Taxs - Outgoing passengers on international flights from Bangkok's Don Muang airport must pay 200 baht. 20 baht per person is collected for domestic flights.

Question ?

What is the information that you are interested?
Useful information

What information that you would like to see?
Bank/ bargaining/ business hours

Answer

BANK, BARGAINING, AND BUSINESS HOURS
****

Bank - Banks provide standard services nationwide, Monday through Friday, except public and bank holiday, between 8.30 A.M. and 3.30 P.M. Bank currency exchange centers operate from 7.00 A.M. to 9.00 P.M., seven days a week, including holidays.

Bargaining - Except in department stores where items have fixed prices, Bargaining is an accept practice throughout Thailand.

Business Hours - Most commercial concern in Bangkok operate on a five-day week. Government offices are generally open between 8.30 P.M. with a noon to 1.00 P.M. lunch break, Monday through Friday except on public holidays.

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Question ?

What is the information that you are interested?
Useful information

What information that you would like to see?
Car hire and church service

Answer

CAR HIRE AND CHURCH SERVICE
****

Car hire - The Bangkok Yellow Pages list local and international automobile rental companies. Visitors are advised to shop around since most company offer different conditions. Self-drive and chauffeur driven automobile are widely available. Car hire companies also operate in Pattaya, Hat Yai, Phuket, and Chaing Mai.

Church Service - Christian churches are found in Bangkok and most provincial capitals. Service are mostly in Thai, with certain service in English, French, and Germany.

Question ?

What is the information that you are interested?
Useful information

What information that you would like to see?
Electricity/ embassies/ emergecies

Answer

ELECTRICITY, EMBASSIES, AND EMERGENCIES
****

Electricity - Thailand operates exclusively on 220 volt, 50 cycle AC power.

Embassies - Some 50 countries maintain embassies, consulates or legation in Bangkok. Most are concentrated around the Sukhumvit, Phoenchit, Witthayu and Sathon Road areas. A complete list of such missions is featured in the Yellow Pages of the English edition of the Bangkok Telephone Directory.

Emergencies - Bi-lingual tourist police are attached to Tourism Authority of Thailand in Bangkok, Pattaya, Chaing Mai, Hat Yai, Phuket, and Kanchanaburi to provide speedy assistance to visitors.

Question ?

What is the information that you are interested?
Useful information

What information that you would like to see?
Language

Answer

LANGUAGE
****

Spoken and written Thai remain largely incomprehensible to the causual visitors. However, English is widely understood, particularly in Bagkok where it is almost the major commercial language. English and other European languages are spoken in most hotels, shops and restaurants, in major tourist destinations, and Thai-English road and street signs are found nationwide.

Question ?

What is the information that you are interested?
Useful information

What information that you would like to see?
Medical service

Answer

MEDICAL SERVICE
****

All tourism destinations and provincial capital have hospitals and clinics staffed by well-trained doctors and nurses.

Question ?

What is the information that you are interested?
Useful information

What information that you would like to see?
National holidays

Answer

NATIONAL HOLIDAYS
****

January	1	New Year's Day
February	Full Moon Day	Makha Bucha
April	6	Charki Day
April	12 - 14	Songkran
May	5	Coronation day
May	Full Moon Day	Wisakha Bucha
July	Full Moon Day	Asanaha Bucha
August	12	H.M. The Queen's Birthday
October	23	Chulalongkorn Day
December	5	H.M. The King's Birthday
December	10	Constitution Day
December	31	New Year's Eve

Question ?

What is the information that you are interested?
Useful information

What information that you would like to see?
Postal service

Answer

POSTAL SERVICE
****

Thailand's mail service is reliable and efficient. Major hotels provide basic postal servives on their premises. Bangkok's Central G.P.O. on New Road is open from 8.00AM to 6.00PM, Monday through Friday, and from 9.00AM to 1.00PM on Saturday, Sunday and public holidays.

Telegrames may be sent at any time of the day or night. Upcountry post offices maintain similar hours, except that they close at 4.30 PM.

Question ?

What is the information that you are interested?
Useful information

What information that you would like to see
Thai currency

Answer

```
THAI CURRENCY
**************
Thai currency - The Thai baht is worth about 4 cents.
One US dollar = approximate 25 baht. The baht is divided
into 100 satang. 'Copper' coins are valued at 25 and 50
satang. 'Silver' coins are in denominations of 1,2, and
5 baht. Banknotes are valued at 10 baht(brown). 20 baht
(green), 50 baht (blue), 100 baht (red) and 500 baht (purple).
Tourist information - is available at the Tourism Authority
of Thailand head office in Bangkok and TAT information
counters in counters in Bangkok Airport and every airport
where there is TAT local office. In Thailand, each office's
information desk is open seven days a week, including public
holidays, round the year.
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APPENDIX F

QUESTIONNAIRE

Questionnaire

( ) male ( ) female age: ( )20-35 ( )36-50 ( )50+

A. After using expert system to get information(s), please complete the brief questionaire under the appropriate choice of:

strongly agree	(SA)
agree	(A)
disagree	(D)
strongly disagree	(SD)

Your answers will help us to serve you better.

1. Generally, you like this program.
   ( )SA ( )A ( )D ( )SD

2. The expert system was easy to use.
   ( )SA ( )A ( )D ( )SD

3. The information were helpful.
   ( )SA ( )A ( )D ( )SD

4. The expert system is a good resource to see information for visiting Thailand.
   ( )SA ( )A ( )D ( )SD

5. The topics were interesting.
   ( )SA ( )A ( )D ( )SD

6. The information was clear.
   ( )SA ( )A ( )D ( )SD

B. Please fill out the following question.

1. What did you like most about the expert system?
   _____
   _____.

2. What did you like least about the expert system?
   _____
   _____.

3. What other topics would you like to see in an expert system?

_____

_____.

4. What do you think should improve the information most.

_____

_____.

5. Other comments.

_____

_____

_____.

THANK YOU!

APPENDIX G

DATA COLLECTED AND COMMENTS

After the participants used the expert system, all of them were asked to fill out the questionaire, and the result is shown below:

1.Answer to questions

Question no.	SA	A	D	SD
1	16	4		
2	9	11		
3	17	3		
4	15	5		
5	15	5		
6	10	7	3	

SA - strongly agree
A - agree
D - disagree
SD - strongly disagree

2. Fill-in questions

1. What did you like most.....
   - 1.1. information provided
   - 1.2. quick response
   - 1.3. less time consuming
   - 1.4. self-explanation
   - 1.5. easy to follow

2. What did you like least.....
   - 2.1. lack of interactivity (only ask question)
   - 2.2. lack of explanation of some events named in the Thai language
   - 2.3. start the prolog program

3. What other topic would like to see.....
   - 3.1. Thailand in general
   - 3.2. Entertainment & sports
   - 3.3. Cultural
   - 3.4. business
   - 3.5. history

4. Improvement.....
    4.1.some information was not clear, should provide more than 1 screen

5. Comments....
    5.1. would like to see a wide range of choice
    5.2. would like more information

APPENDIX H

MEDIA LOCATION SHEET

The expert system named THAI.PRO can be seen at the office of MS in Training and Learning, School of Media and Arts, New York Institute of Technology, Old Westbury, New York.

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